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ABSTRACT

Intended for Massachusetts community college personnel, the document presents suggestions and consideration for providing services to handicapped students. Based on questionnaires from approximately 200 key college personnel, the guide emphasizes eight issues (topics are in parentheses): the student population to be served (blind, partially-sighted, deaf, partially-hearing, epileptic, and students with other physical disabilities); program management (coordination, programs for deaf students, and sources of funding); architectural accommodation (rules and regulations of the Architectural Barriers Board and plans for architectural accessibility); admissions (the screening process and the admissions interview as a planning tool); counseling and advisement (attitudes toward physically disabled individuals, responsibilities of the counselor, factors to consider when counseling the hearing impaired student, and psychometric test); instructional services (support services, procedures for instruction and testing, curriculum materials, aids and equipment, and remedial instruction); and job placement (interagency coordination, job adaptation, resources to facilitate job placement, and job development). Each chapter is followed by a resource section which gives information for contacting persons and/or agencies and for obtaining publications applicable to the needs of personnel. (SB)

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ACCOMMODATING STUDENTS WHO HAVE PHYSICAL DISABILITIES:

A Resource Guide for Massachusetts Community Colleges

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August 1975

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INTRODUCTION

Technical Education Research Centers prepared this document to assist community college personnel in two ways. As a planning tool, it provides suggestions for implementing various services and directs the reader to resources which will assist in initiating, adapting or expanding services to handicapped students. As an inservice training tool, it orients the reader to basic considerations regarding the accommodation of disabled students and identifies sources--literature and persons--to be tapped for further information.

The material in the Guide is based on an extensive study of the literature in the fields of rehabilitation and education, and that literature describing specific postsecondary programs which accommodate handicapped students throughout the United States. Interviews with leading educators and especially with handicapped students augmented the research and provided a thrust for shaping the content.

An important factor in determining topics to be emphasized in the Guide was a survey of key personnel in all Massachusetts community colleges. Fourteen of the fifteen community colleges responded to a series of 18 questionnaires, each focusing on a particular function or service (e.g., job placement, architectural accessibility, remedial services). From the responses, project staff identified issues of central concern to the majority of the approximately 200 community college respondents. The Guide emphasizes these issues.

Because the Guide is designed specially for Massachusetts community colleges there are certain services not treated in detail. These services have been underemphasized, not because they lack importance, but rather, because they are services which are already highly developed at Massachusetts community colleges. Modified registration procedures are an example. If the reader has a question about an issue not specifically addressed in the Guide, it is likely that he/she may secure needed information by contacting the resource persons who are listed in connection with related issues.

The chapters are arranged primarily according to departmental functions. However, many issues relative to serving disabled students cut across departmental lines. Therefore it is advisable for the reader to consult chapters other than the one directed at his/her particular department and to refer to the index for further information about a specific topic.

Each chapter of the Guide is followed by a resource section which provides complete information for contacting persons and/or agencies. Each person and agency listed expressed willingness to serve as a resource. The resource section further indicates methods for securing publications, each of which has been thoroughly reviewed by project staff for applicability to the needs of Massachusetts community college personnel.

For ease of obtaining materials, the Guide notes the availability of some publications through Interlibrary Loan (ILL). Requests by community college personnel for materials available through Interlibrary Loan should be handled by the community college librarian. ILL notations in the resource sections identify the particular library from which the project staff borrowed material; however, the items may be available from other libraries as well. Materials which were purchased rather than borrowed by the staff do not have ILL notations, but are likely to be available through ILL also.

Materials can be obtained not only from university libraries, but also from the specialized collections found in many smaller libraries in Massachusetts, for example the Massachusetts Rehabilitation Library in Boston and the Research Library at Perkins School for the Blind in Watertown. For materials related to deaf students, Gallaudet Memorial Library at Gallaudet College in Washington, D. C., and Wallace Memorial Library (which serves the National Technical Institute for the Deaf) at Rochester Institute of Technology are two excellent sources.

Making full use of the people, agencies, and publications referred to in the Guide will greatly enhance its effectiveness in assisting community colleges to accommodate physically handicapped students. Further, community college personnel will find the consumer of their services--the student who is physically disabled--to be a particularly valuable resource.

2

THE STUDENT POPULATION TO BE SERVED

All too often, able-bodied people view persons with handicaps according to stereotyped pre-judgments: that they can never lead "normal lives"; that they are tragic figures to be pitied; that they are psychologically "different"; that the more severe the handicap the more maladjusted the person will be. Such devaluative attitudes are discussed in the chapter, "Counseling and Advisement." Suffice it to say that such misconceptions on the part of educators can seriously undermine a college's efforts to accommodate persons who are handicapped. It is essential that community college personnel understand that persons with physical disabilities exhibit as great a variety of abilities, goals, personality characteristics, and problems as do non-handicapped persons.

Each student is unique and must not be approached as a member of a stereotyped group; knowledge that a person has a disability, that it is of a certain type or of a certain level of involvement, is rarely sufficient to permit any valid prediction of that person's capacity to successfully undertake a course of study at a community college, to pursue a certain career, or to adjust to the social, academic and physical environment of the college.

The reader is asked to keep this concept in mind when reviewing the contents of this chapter. The information that follows is intended to orient community college personnel to the nature of various physical disabilities, to the ways people often overcome limitations imposed by physical loss, and to certain issues community college personnel may have to consider in serving students with physical impairments. Some generalizations will be made regarding factors found by researchers and direct service providers in the field of rehabilitation and education to be commonly associated with various handicapping conditions. These factors should not be construed as automatically applicable to an individual merely because he/she has a certain handicap. Knowledge gained from this orientation can no way supplant the necessity of approaching each student as a unique individual with unique abilities and needs.

Blindness

The term "legally blind" is applied to persons whose vision in the better eye is 20/200 or less, or whose visual field subtends an angle no greater than 20 degrees.[1] In other words, a legally blind person can see less (even with correction) at a distance of 20 feet than a person with normal vision can see at 200 feet, or has a field of vision that is limited to a narrow angle. Contrary to popular conceptions, the person considered legally blind is likely to have some vision with a certain degree of light perception and motion perception; only a small minority of persons are actually totally blind.

There are a number of causes of blindness. In the United States blindness at birth has most often been associated with: rubella (German measles) affecting the mother in the first three months of pregnancy; retrolental fibroplasia (RLF), a condition of fibrous tissue behind the lens of the eye caused by excessive administration of oxygen to premature infants; congenital syphillis; or infection during delivery (opthalmia neonatorum). Adventitious blindness refers to the accidental occurrence of the disability after birth through trauma or disease. Injuries now account for only about 3 percent of cases of blindness. About half the cases of blindness in the United States are a function of diseases associated with aging--macular diseases (which affect the central area of vision), cataracts, glaucoma, and diabetes.[2]

In most academic and career situations the senses of touch and hearing, and the use of technical aids permit many persons to function so successfully that their blindness is not a handicap. For taking notes while studying or attending classes or meetings, the tape recorder, braille stylus and slate, braillewriter (braille typewriter), or memory are used, as warranted by the situation and individual preferences.

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[1] Irving R. Dickman. Living with blindness. New York: Public Affairs Committee, Inc., 1972, p. 7.

[2] Ibid., pp. 13-14.

Reading is performed through use of brailled materials, records, cassettes, and tapes available from national and local libraries and service agencies. Materials not already available can be forwarded to these agencies for braille transcriptions and recording. In situations where there is insufficient time to have materials transcribed, and for library research, the student may have to rely on sighted readers who may volunteer but who are usually paid by the student or by the state Division of Vocational Rehabilitation (in Massachusetts, the Massachusetts Commission for the Blind) which is sponsoring the student. As such electronic aids as the Optacon, which transforms printed words into tactile images that can be felt with the fingertips, are marketed at reasonable costs, the reliance of blind persons on transcribed materials or on readers may diminish somewhat.

Other devices which provide for independence in academic and occupational pursuits are: signature guides; technical instruments with brailled or notched markings or electronic sound feedback devices, such as carpenter's levels, micrometers, calipers and protractors; the Stereotoner, which transforms letters into tone patterns; and the braille computer terminal.

Learning takes place via tactile and sound cues; only minor instructional modifications need be implemented on the postsecondary level for these students. Spatial relations can be perceived by the blind student if the teacher or another student, for example in the laboratory setting, describes the spatial relations of a piece of machinery and if an opportunity is provided for hands-on (literally) experience. Verbally presenting what is written on the blackboard is also helpful and usually does not inconvenience the instructor.

Given the effectiveness of utilizing sensory modalities other than vision for learning, the availability of adapted curriculum materials and special devices, and the relative ease of accommodating persons who are blind on the postsecondary level, it is not surprising that blind persons

are able to major in a number of different fields in postsecondary institutions, and are employed in a wide variety of occupations. As reported by the Massachusetts Commission for the Blind,[3] college students sponsored in 1974 majored in such fields as accounting, archeology, counseling, law, secretarial science, medical transcription, business administration, and teaching on professional and paraprofessional levels. Legally blind persons placed in jobs that year entered occupations including the following:

Professional, Semi-Professional, and Managerial:

- Control Technician
- Library Assistant
- Minister
- Musician
- Nurse's Aide
- Nursery Attendant
- Professor of Economics
- Programmer
- Psychologist
- Radio Broadcaster
- Recreational Assistant
- Registered Nurse
- Social Worker
- Supervisor of Volunteers
- Teacher's Aide
- Traffic Manager
- Typing Instructor

Sales Service, Clerical:

- File Clerk
- Information Supervisor
- Insurance Salesman
- Medical Transcriber
- Office Assistant
- Receptionist
- Retail Store Aide
- Sales Clerk
- Switchboard Operator
- Telephone Service Representative

Industrial:

- Assembly Worker
- Bench Assembler
- Color Mixer
- Computer Operator
- Electronic Assembler
- Film Splicer
- Machine Operator
- Sheet Metal Worker
- Stitcher
- Woodworker

Miscellaneous:

- Auto Mechanic
- Case Aide
- Darkroom Attendant
- Groundskeeper
- Maintenance Worker
- Seamstress
- Small Engine Repair
- Telephone Interviewer

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[3] The Commonwealth of Massachusetts Commission for the Blind. Annual Report, 1974. Boston, Mass.: Commission for the Blind, 1974, pp. 15-23.

Yet despite the proven ability of blind persons to lead independent and productive lives, stereotypes and depersonalization abound regarding blindness. Blind persons are not deaf: frequently, however, sighted persons shout at those without vision, or feel it is necessary to use the individual's companion as an interpreter, rather than addressing the individual directly. A radical illustration is quoted in the Public Affairs Pamphlet, Living with Blindness:

> Not long ago, I visited the dentist with my guide dog, Amber. A receptionist showed us into the waiting room, and the three of us were alone. "And what, my dear," said the receptionist, turning to Amber, "is the gentlemen's name?"[4]

Neither do persons who are blind have a "sixth sense" or exceptionality of olfactory, auditory, or tactile senses. Rather, some blind persons, through practice and use of memory, learn to make better use of their senses.

Sighted persons often feel awkward about interacting with persons who are blind. Relaxing and remembering the following will contribute to the ease of interactions:

- If you are in doubt as to whether a person needs some assistance, or of how to help that person, just ask him/her.
- If you're walking with a person, don't steer him/her by holding the arm; allow the individual to take hold of your arm. Your body movements will indicate direction, steps and curbs.
- "Sight," "look," and "see" are not dirty words. They are no more anathema to a blind person than are "and" and "but."
- You can indicate that you're talking to a person by touching him/her lightly on the elbow or addressing him/her by name.
- If you're not sure that a person will recognize your voice, mention your name.
- A final note for dog lovers: don't play with guide dogs.[5]

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[4] Dickman. Living with blindness, p. 4.

[5] When you've hired a blind person. New York: American Foundation for the Blind, Inc., 1973.

An excellent text on blindness is Herbert Rusalem's Coping with the Unseen Environment.

Partial-Sightedness

Partial-sightedness, also referred to as limited vision, has been defined as visual acuity ranging from 20/70 to 20/200 with glasses. The accuracy of using such visual acuity figures to define partial-sightedness, however, has been disputed, for these figures do not actually indicate how functional a person's vision is. For example, two persons with very similar levels of visual acuity could actually differ in how useful their vision is, that is they may differ in "visual efficiency." One person might be able to read regular printed matter with a powerful magnifier, while the other might not. A certain environmental condition such as lighting might aid one partially-sighted person to function quite adequately, while that same degree of lighting might be detrimental to another person. Hence, the term partial-sightedness is at best a nebulous classification; it indicates that a person's vision cannot be fully corrected with glasses, but it does not indicate the extent to which the individual is functionally handicapped.[6]

Limited vision is frequently related to diseases associated with aging: diabetes, cataracts, macular degeneration, and glaucoma. The majority of cases of limited vision found in children is congenital, and as with blindness, have been caused by rubella and retrolental fibroplasia.

Some persons with limited vision will need to use few, if any, special aids: often a mere adjustment of physical proximity--sitting close to the blackboard or holding a book or object close to the face--is a sufficient adjustment.

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[6] Irving R. Dickman. What can be done about limited vision? New York: Public Affairs Committee, Inc., 1973, pp. 3-4.

Other persons may use any of a number of aids. Telescopic spectacles, which look like jeweler's lenses mounted on glasses frames, highly magnify a narrow field of vision and are useful for close work. Hand-held and table model magnifiers, optical enlargers which project printed matter into a built-in viewing screen, and glare shields which reduce the glare from white paper, may be used for classwork or on the job. A closed circuit television, consisting of a small camera and a special monitor (or a regular television screen) will magnify printed material electronically and reduce glare.

Large type reference books, newspapers and textbooks are available from public and private agencies; since the number of textbooks available is limited, some individuals may find it convenient to use tapes or cassettes of the materials. Many commercially-used typewriters may be fitted with large type optional features, greatly facilitating academic and occupational tasks. An accessory for the previously mentioned closed circuit television will enable the typist to read what he/she has typed in regular size print while it is still in place in the typewriter.

Lighting in classrooms and laboratories may present some difficulty; the bright lighting optimal for one partially-sighted person may be detrimental to another who, because of retinitis pigmentosa or albinism, may prefer dimmer lighting; such levels of lighting may be inappropriate for students with unimpaired vision. In most cases such problems can be overcome through seating arrangements, use of small desk lamps, enlargers or medically-prescribed tinted lenses.

Deafness

Operationally defined, deafness is an impairment of hearing so severe that the individual must rely on vision for communication. The reader should note the distinction between the terms deaf and hard of hearing as used in this Guide: the latter refers to the individual who can rely somewhat on his/her hearing for purposes of communication.

Communication problems of deaf persons are usually related to age at onset of the disability. Persons postlingually deafened--those who suffered the hearing loss after having acquired language and speech--are generally less functionally handicapped than persons who are prelingually deaf. Prelingual deafness refers to hearing loss present at birth or occurring before language and speech patterns have been learned; persons thus disabled are likely to have communication problems both expressively (transmitting thoughts via written and spoken language) and receptively (understanding the written and spoken word). Developmental problems such as experiential deprivation and conceptual limitations are often associated with prelingual deafness. Ways in which these factors may affect counseling are discussed later in the Guide.

It is crucial to remember, however, that speech and language difficulties are not related to impaired intellect, but rather are a function of being deprived, early in life, of the opportunity to acquire language through normal channels. Numerous research studies indicate that intelligence, manual dexterity, and motor skills have the same distribution in the deaf population as within the general population.

Simply stated, the various ways in which deaf persons are taught to communicate may be subsumed under three major categories: oral, manual and total communication. The oral method, which stresses the development of speech, the use of speechreading (lipreading), and writing is usually more difficult to learn, particularly for prelingually deaf persons who have had little or no experience in hearing syntax, vocabulary and the sound of the spoken word. Speechreading is generally inadequate for total understanding of the speaker. Only 30% of spoken English is visible on the lips and approximately 50% of English sounds are homophonous (look alike on the lips), for example, "t" and "d." Some deaf persons may master speech articulation, but others may have speech which is not fully comprehensible.

The various methods of manual communication include sign language, fingerspelling, Seeing Essential English (SEE), and siglish. Sign language is not based on the syntax and grammar of English but rather is concept-based. Spatial positioning is important in sign: the same gesture may have a different meaning depending on where it is located in relationship to the body. There are unique idioms, as in any language. Verbs, tense, and adjectives and articles used in English are not always used in signing; for example "I feel," "I felt," and "I have felt" may be expressed by using the same sign. Hence, a person highly fluent in sign language may still have grammatical difficulty with spoken and written English.

Fingerspelling is a system of hand configurations representing the 26 letters of the alphabet. The English word is spelled out using these motions.

Seeing Essential English (SEE) involves signs which correspond to the sound components (phonetics) of English words. Certain signs which indicate such factors (functional morphemes) as tense, pluralization, and person are used. Siglish is actually signed English where the individual uses the signs of sign language but puts them together according to the rules of English syntax.

Total Communication is an approach advocating the use of a number of modes of communication, both oral and manual--speaking, writing, signing, fingerspelling, and speechreading--in combinations which are most effective for the individual.

A deaf person's use of one or more of the above types of communication is dependent upon a number of factors, including educational background (oral vs. manual vs. total), extent of residual hearing, age at onset of hearing loss, personal preference, achievement orientation of the individual, and native skills. The generalizations can be made, however, that the majority of deaf people are proficient in manual types of communication, and that speechreading, at best, is an imperfect tool.

Communication problems, per se, are not insurmountable obstacles in the classroom. The few students who may be highly proficient speechreaders should sit near the front of the class and the lighting should be bright. The instructor may speak normally (i.e. not exaggerate lip movements), face the class, write technical words on the blackboard, and avoid smoking or covering the mouth with the hand while speaking.

For some students, it will be preferable to have an interpreter in the classroom who will relay statements through manual communication. If the topic of instruction involves the use of technical words, the instructor should inform the interpreter beforehand, so that signs or some other system may be developed by the interpreter for relaying these unfamiliar words to the student. The interpreter should stand near the instructor, so that the student can see both clearly. When the student speaks or signs, the instructor should look at him, not at the interpreter. Likewise, the instructor should address the student directly.

Although some students who are deaf are highly verbal and able to express themselves well in writing, others may have extreme difficulty in verbal expression and may exhibit underdeveloped vocabulary and poor syntax. It may hence be necessary to offer a remedial program at the community college to improve these skills. Information regarding such remedial programs is presented in the chapter "Instructional Services."

The common stereotype that deaf persons are capable only of performing unskilled and semi-skilled jobs, is of course, totally without foundation. The National Census of the Deaf Population, performed by the National Association of the Deaf in 1971, reveals that deaf persons are employed in occupations on all levels--professional, technical, managerial, skilled, semi-skilled, and unskilled. However the highest concentration of deaf persons is in manufacturing occupations on the semi-skilled level. Unless traditional employment patterns among deaf persons shift away from these types of occupations and towards areas of future labor market

demands, such as business, health services, and technical jobs,[7] unemployment may become a major problem for the deaf population. Community colleges are in a particularly good position to provide postsecondary education in precisely these occupations.

It should be noted that there is a relatively low prevalence rate for prevocational deafness (deafness occurring between birth and 19 years of age): 2 per 1,000. Furthermore, the Northeast has a lower prevalence of deaf persons than any other region in the United States. Hence it should not be necessary for all community colleges in Massachusetts to implement accommodation procedures for these students. Rather these students could be served on a regional basis. A further discussion of the regionalization of programs for deaf students in Massachusetts is presented in the chapter "Program Management."

An excellent reference providing additional information on the causes of hearing impairments, methods of communication, and educational, social, and psychological factors associated with deafness is Hearing and Deafness by Hallowell Davis and S. Richard Silverman.

Partial Hearing Loss

The person who is hard of hearing may depend to a certain degree on aural reception to hear the speech of others. In contrast, the deaf individual must rely solely on vision for receptive communication.

Hard of hearing persons do not consititute a homogeneous group in terms of expressive or receptive communication abilities or needs for educational support services. One person referred to as hard of hearing may have only mildly impaired hearing which is not really a handicap: he/she may have difficulty only in hearing faint speech or in hearing

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[7] Jerome D. Schein and Marcus T. Delk, Jr. The deaf population of the United States, pp. 95-96.

sounds from a distance, and may have no problems in oral and written communication. Another person considered hard of hearing may have a severe hearing loss, may experience problems in understanding speech even with a hearing aid, and may have difficulty in articulation.

Further contributing to the heterogeneity of the population of persons referred to as hard of hearing is that different types of impairments may exist. That is, the hearing impairment may involve a loss of sensitivity of hearing (the individual can hear sound only if it is of a certain loudness or pitch), or a loss of ability to discriminate between certain sounds, or a combination thereof.

Additional factors bearing upon the extent to which a hearing loss will handicap the individual are: age at onset of the loss (whether it occurred before or after speech and language were acquired); extent to which the impairment can be corrected by a hearing aid; adequacy of training the person has had in learning to use his/her residual hearing for understanding speech; and individual psychological factors.

Thus the label hard of hearing tells one little about the educational needs of the individual. Some hard of hearing persons may speechread and hence counselors and instructor would have to take this factor into consideration when teaching the class or addressing the student. Other students might require an acoustic environment as free as possible of background noise. Still others may have difficulty in understanding a speaker who has a very low or high pitched voice. College personnel will have to determine what special adjustments, if any, are needed on an individual basis.

The text The Hard of Hearing by John J. O'Neill addressed issues such as cause and classification of hearing loss, aural rehabilitation, and psychosocial and educational issues.

Epilepsy

Of all physical disabilities, epilepsy is one of the least understood and most stigmatized in the United States. The following operational definitions are helpful in understanding the types of seizures that can result from this complex disability:

Petit mal: a brief loss or impairment of consciousness (absence). This may be accompanied by a rhythmic blinking of the eyes and occasionally by a jerking of the arms (myoclonic). The subject rarely falls (akinetic), and the seizure may even go unnoticed by others in the vicinity. Petit mal seizures principally affect children and adolescents.

Grand mal: a generalized seizure that may be preceded by vague warning signs. The subject's body abruptly stiffens owing to severe muscle contraction. He may emit a cry before losing consciousness and falling. He may turn to a dusky skin color because of reduced respiration, bite his tongue, lose bladder control. This rigid state is followed by jerking movements in all four limbs, face, jaw, and head. The subject may salivate excessively. Following the seizure, which lasts varying lengths of time but usually a minute or so, the subject will be in a coma or deep stupor. When he regains consciousness, he will ache all over and may vomit.

Psychomotor: A period of purposeful but irrelevant behavior about which the subject has an anmesia. The unusual behavior may involve any actions from highly complex ones to the simplest activities. One-third of the adult epileptic community may be afflicted with this type of seizure, but very few children are.

Jacksonian: abnormal sensations or uncontrolled jerking of one part of the face, arm, or leg. This gradually spreads and may involve the entire side of the body. The subject rarely loses consciousness.

Other *focal (partial) motor seizures:* convulsive movements on one side of the body (face and/or limbs). The muscles first become rigid, but then jerking usually follows. Focal seizures may precede generalized seizures and loss of consciousness.

Thalamic and hypothalamic: attacks of dizziness, pain, sweating, heart palpitation, vomiting, and other disorders. These seizures were thought to originate in the thalamus and hypothalamus, thus the nomenclature. Other autonomic centers of the central nervous system have been used to name seizure types as well, and the entire class has been called autonomic epileptic seizures.

> *Febrile:* repeated convulsions associated with temperature illnesses. These seizures rarely continue in children beyond age 10, but many of the children who have experienced febrile seizures develop seizures later without febrile illness.
>
> *Infantile spasm* or *hypsarrhythmic seizures:* forceful, intermittent, irregularly spaced spasms occurring during infancy. The electroencephalograms show abnormal, chaotic wave patterns, thus the name hypsarrhythmic seizure.[8]

Some persons with epilepsy are seizure-free for years due to effectiveness of anticonvulsant drugs; for others, seizure control may be difficult to achieve and the person may experience up to one or more seizures per day. Seizure-free individuals can most likely pursue any major or career, provided that the sedative effects of medication are minimal. When seizures are not controlled, safety factors must be taken into consideration upon advising the student as to a course of study or a career. If a certain major involves laboratory or shop work which could be potentially dangerous were a seizure to occur, the counselor should confer with the student and his/her physician before making a final decision as to the appropriateness of this major.

Driver's licenses are not granted unless the individual has been seizure-free for a certain period of time; hence careers which necessitate driving may have to be discounted. Persons whose seizures are controlled will have little difficulty in obtaining automobile insurance in Massachusetts; however, in many other states seizure-free persons with driver's licenses are not granted insurance, even in the "assigned risk" category.

All persons should know what to expect and what to do if an individual has a seizure. The following describes the observer's role:

> Usually, the person having a seizure is not in danger, even if it is of the grand mal variety, and nothing can be done to stop the attack when it is already underway. All one can do is to prevent the person from adding injury to insult. If he is

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[8] George N. Wright (ed.). Epilepsy rehabilitation. Boston: Little, Brown & Co., 1975, pp. 2-3.

about to fall, he can be guided to the floor and a soft object placed under his head. Even the hand of the observer is sufficient when placed underneath the person's head to prevent it from repeatedly striking a hard surface during the clonic phase of the seizure. Tight clothing may be gently loosened, but there is no sense in frantically ripping the tie or shirt buttons off, as seen in some "educational" movies dealing with epilepsy. The person gets blue in the face *not* because there is a mechanical obstruction to the flow of air into the lungs, but because breathing has stopped. It will resume spontaneously when the attack ceases.

Inserting a soft object into the person's mouth so that he does not bite his tongue is theoretically desirable but usually impossible. Tongue-biting occurs immediately after the onset of the attack, and there are only about five seconds or so during which the mouth is wide open and a padded tongue depressor can easily be inserted. Immediately thereafter the jaws close tightly, and it is a serious mistake to try prying them open. The tongue is already bitten anyway, and one can knock out some loose teeth in the attempt to help. After the tonic and during the clonic phase the jaw may open and close rhythmically. This provides another opportunity for insertion of a tongue blade, but the observer has to be calm and time his attempt properly or else damage to the person may result. Under no circumstances should he insert a finger into the patient's mouth because he may be severely bitten.

Another fear that exists in the mind of the public is that, unless something is done, the person may "swallow" his tongue. This is of course anatomically impossible. It is possible, however, for the tongue to become limp and slide backward to obstruct the entrance to the trachea immediately after the attack. This is extremely rare and can be avoided if the person's head is turned to one side after the muscular contractions of the seizure are over. This maneuver has the additional advantage of keeping some of the saliva from dripping on the person's clothing.

When the attack is over and before the person regains consciousness, one should disperse onlookers. As the person is coming to, one may just keep talking to him in a low and reassuring voice.

In the psychomotor seizure, there is no falling and no tongue-biting. The only danger is that the person may wander off in a confused fashion or hurt himself with some sharp object that may be lying around. One should remove such objects from his reach but should not forcibly take away anything the person may be holding. Remember that the person is confused; he will misinterpret any attempts to help him, and a battle is likely

> to ensue. Do not restrain the person in any way; leave him on his own devices. He is completely harmless under these circumstances unless force is applied. It is advisable, however, for the observer to stay with the person during the period of confusion, even if this requires taking a little walk with him.[9]

Employment discrimination is more severe against epileptics than it is against persons with any other type of disability. Job placement personnel at community colleges will have to assume two responsibilities relative to this situation: selective placement of persons with seizures in relatively non-hazardous jobs; and provision of information to assuage the fears of prospective employers. For example, one might cite records from the Workmen's Compensation Board of New York indicating that industrial accidents from seizures "were less than half those resulting from sneezing and coughing." The chapter "Job Placement" further elucidates issues relative to the placement of persons with epilepsy.

An excellent resource on epilepsy is George N. Wright's Epilepsy Rehabilitation.

Other Physical Disabilities

Spinal cord injury may be the result of a disease or of a traumatic injury. The location, or level of the spinal cord where damage has occurred, is a key factor in determining the approximate extent of an individual's physical limitations. Paraplegia involves paralysis of the lower part of the body resulting from injury to the spinal cord at the level of the chest or lower back. Quadriplegia results from damage to the cervical portion of the spinal cord.

Most persons with paraplegia are capable of leading independent lives. With appropriate physical rehabilitation the individual strengthens the upper body and learns techniques to perform most activities of daily

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[9] Ibid., pp. 45-46.

living without assistance. With the proper adjustments of physical environment and through the use of mechanical aids, paraplegics are fully capable of achieving educational and career goals, as is evidenced by the numerous persons who have done so.

Depending on personal motivation and the level of the spinal cord lesion, it is possible for some persons with quadriplegia to lead as independent lives as do persons with paraplegia. By using the remaining movement of the neck, shoulders, elbows, wrists, and fingers, and employing special aids, quadriplegics can drive cars, independently propel and transfer to and from the wheelchair, participate in certain sports, and acquire skills involving manipulative ability such as laboratory work and writing.

Cerebral palsy has been described by United Cerebral Palsy Association, Inc. in the following manner:

> Cerebral Palsy is the clinical picture, usually manifesting itself in childhood, with dysfunction of the brain in which one of the major components is motor disturbance.
>
> Thus, cerebral palsy can be described as a group of conditions, usually originating in childhood, characterized by paralysis, weakness, incoordination or any other aberration of motor function caused by pathology of the motor control centers of the brain.
>
> In addition, there may be other manifestations of cerebral dysfunction, such as learning difficulties, psychological problems, sensory defects, convulsive and behavioral disorders of organic origin.[10]

Cerebral palsy is popularly construed as involving mental retardation, but in fact, "intellectual deficit is present in only about half the population with this disease."[11] The other half have intelligence levels

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[10] Sherwood A. Messner and Una Hayes. "Cerebral Palsy." In James F. Garrett and Edna S. Levine (eds.), Rehabilitation practices with the physically disabled. New York: Columbia University Press, 1973, p. 241.

[11] Ibid., p. 243.

within normal boundaries, and a proportion of the persons without severe learning disabilities will be capable of pursuing postsecondary education, given that appropriate support services are present. It is important to remember that the speech difficulties associated with this disease are not indicative of impaired intellectual abilities, but are, rather, motor problems.

The individual with severely limited use of the upper and lower extremities (as a function of high level spinal cord injury or of a severely involved neuro-muscular disease) can attend a postsecondary institution and enter a number of careers. Some functional independence is achieved through the use of motorized wheelchairs, which can be individualized for control by a small movement of the finger, a turning of the head, or a breath. This student is likely to have an attendant to assist him/her in personal care, transportation, and library work. Tests may be administered orally or the student may make arrangements to type the responses. Participation in laboratory work should be assessed on an individual basis, taking into consideration the manual abilities of the student and safety factors. If laboratory work is deemed inappropriate, the student can still benefit from observing in that setting. Additional issues relevant to environmental and curriculum adjustments which may be necessary for persons with manual and mobility limitations are discussed in ensuing chapters.

Medical, psychosocial, and vocational information relative to other disabilities such as multiple sclerosis, arthritis, heart conditions, diabetes, amputation, and heart disease, may be found in Medicine and Medical Practice for the Rehabilitation Counselor by Jean Felton et al., and Rehabilitation Practices with the Physically Disabled by James F. Garrett and Edna S. Levine.

RESOURCES

Publications

Coping with the unseen environment: an introduction to the vocational rehabilitation of blind persons. Herbert Rusalem. 1972. $11.50.

Teachers College Press
Columbia University
1234 Amsterdam Avenue
New York, NY 10027

OR

Monroe C. Gutman Library
Harvard Graduate School of Education
6 Appian Way
Cambridge, MA 02138
(617) 495-3423

(ILL)
HV 1652
.R87

Epilepsy rehabilitation. George N. Wright (ed.). 1975. $15.00 hardcover, $10.00 paperback.

Little, Brown & Co.
34 Beacon Street
Boston, MA 02106

OR

Massachusetts Rehabilitation Commission
Library
304 Boylston Street
Boston, MA 02116
(617) 727-2180

(ILL)
340.06

The hard of hearing. John J. O'Neill. 1964. $7.25.

Prentice-Hall, Inc.
Englewood Cliffs, NJ 07632

OR

Monroe C. Gutman Library
Harvard Graduate School of Education
6 Appian Way
Cambridge, MA 02138
(617) 495-3423

(ILL)
HV 2380
.06

Hearing and deafness. Hallowell Davis and S. Richard Silverman. Third edition. 1970. $13.00.

Holt, Rinehart & Winston, Inc.
383 Madison Avenue
New York, NY 10017

OR

Boston University
Mugar Memorial Library
Interlibrary Loan
771 Commonwealth Avenue
Boston, MA 02215
(617) 353-3704

(ILL)
RF 135
F70a

Medicine and medical practice for the rehabilitation counselor. J. S. Felton, D. C. Perkins, and B. A. Levin. 1966. $2.25.

Government Printing Office Bookstore
JFK Federal Building, G-25
Government Center
Boston, MA 02203
(617) 223-6071

Rehabilitation practices with the physically disabled. James Garrett and Edna Levine (eds.). 1973. $15.00

Columbia University Press
562 West 113th Street
New York, NY 10025

OR

Boston Public Library
P. O. Box 286
Boston, MA 02117
(617) 536-5400 X 254

(ILL)
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3
PROGRAM MANAGEMENT

While the accommodation of disabled students does not necessitate a radical reorganization of college programs and services, such accommodation does require a concerted and well-coordinated effort on the part of administrators, staff, and faculty to adapt their existing functions, and in some cases to create new provisions, for serving student needs. It is essential that one individual at the community college assume the responsibility for coordinating this system-wide effort.

Coordination

Several community colleges in Massachusetts have created a formal unit within the college for coordinating accommodation efforts. At other community colleges, personnel (usually from the Student Services Department) have assumed this role in addition to their other responsibilities. Functions exercised by these coordinators, be they full- or part-time, include: serving as an advocate for the disabled student; planning and seeking funding for needed programs and provisions; maintaining liaison with outside agencies; and serving as a central resource for college personnel when consultation is necessary regarding the accommodation of a disabled student.

Some coordinators provide direct services such as counseling, admissions, and job placement, while others do not. The college may adhere to the philosophy that disabled students should be served by those departments serving all students; if so, the coordinator's role is to provide inservice training to college personnel to ensure that appropriate services, techniques, and attitudes exist in serving the student. If no such philosophy prevails, and the coordinator has both the time and expertise, he/she may deliver services directly to the disabled student and conduct inservice training sessions primarily with the college faculty.

The recommendations presented throughout this Guide are placed in the framework of service delivery by departments which regularly serve all students. However, it is equally valid for coordinators to partially or fully provide these services themselves. The key issue is not who provides the direct services, but rather, how effectively the services are provided.

It may be helpful for coordinators to ascertain how individual community colleges in Massachusetts manage their accommodation programs; one may contact the community college personnel listed in the Resource section of this chapter to procure such information. It is also advised that coordinators confer with Massachusetts Commission for the Blind and with area and regional offices of Massachusetts Rehabilitation Commission regarding the planning and implementing of services for disabled students.

Programming for Deaf Students

For severely handicapped deaf students, it may be necessary to have a formalized program, with specialized personnel and more extensive services than would be required to serve students with other disabilities. Factors relative to the accommodation of deaf students are discussed throughout this Guide. In brief, the following are considered necessary program components to optimally serve prelingually deaf students who have severe communication problems:

- A full-time coordinator who is experienced in programming to meet the needs of postsecondary deaf students and fluent in various types of manual communication
- Counselor(s) fluent in manual communication and knowledgeable about the developmental effects of deafness
- On-going inservice training for all faculty and staff who will be serving deaf students
- Special preparatory curriculum developed expressly for deaf students, including extensive remedial English offerings and career exploration

- Credit-bearing instructional classes designed specifically around the learning needs of deaf students
- Flexibility on the part of regular course instructors to: assess the student on the basis of knowledge he/she has acquired; and when appropriate, to avoid penalizing the student who has acquired the knowledge, but evidences language deficiencies when tested
- Course(s) to upgrade students' skills in manual communication
- Direct provision of speech and hearing services or referral to community agency providing such services.[1]

Because there are relatively few persons who will need an extensive program as outlined above, and because the per capita cost may be high, it is essential to regionalize efforts at programming for deaf students with severe language impairments. In planning a specialized program for deaf students or individual services for students with this handicap, community college personnel should consult with Al Sonnenstrahl, Coordinator of Programs for the Deaf, and Lois Willet, Supervisor at the Rehabilitation Services for the Deaf Office of Massachusetts Rehabilitation Commission.

An excellent resource regarding program planning for deaf students is Principles Basic to the Establishment and Operation of Postsecondary Education for Deaf Students edited by E. Ross Stuckless. Additional materials to which community college personnel may refer for information on program planning and administration for students with hearing impairments are:

Education of Deaf and Hard of Hearing Adults in Established Facilities for the Normally Hearing. Gwenyth R. Vaughn.

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[1] E. Ross Stuckless (ed.). Principles basic to the establishment and operation of postsecondary programs for deaf students. Conference of Executives of American Schools for the Deaf, 1973, pp. 8-10.

Improved Vocational, Technical and Academic Opportunities for Deaf People: Research Component. William N. Craig and Nona L. Burrows.

Improved Vocational, Technical and Academic Opportunities for Deaf Persons. Robert R. Lauritsen.

Sources of Funding

The following grant programs administered by the federal government and by the Commonwealth of Massachusetts will entertain proposals relative to the postsecondary education of physically handicapped students. Additional grant programs are identified in the subsequent chapters, "Architectural Accessibility" and "Instructional Services."

Special Services for Disadvantaged Students

These projects are intended to provide remedial and other special services for students with academic potential who need assistance to continue their education. Evaluation criteria include:

i) evidence of enrollment of physically disabled and/or low-income students who are in need of supportive special services; ii) availability and distribution of financial assistance to meet the needs of low-income students; iii) comprehensive plan for recruitment of students; iv) institutional policies intended to maximize a student's chances for a successful completion of postsecondary education; v) comprehensive work program; vi) plan for staff selection and training; vii) plan to orient the community to the goals and objectives of the Special Services Program; viii) method to assess and document the project's results; and ix) utilization of institution and community resources.

Several community colleges have already received funds from this program. The tentative deadline for applications for FY 77 is December 12, 1975. Information about funding priorities and application forms for grants may be obtained from Grace Ward, Program Officer at the HEW Region I Office of Education.

Regional Education Program

The Bureau of Education for the Handicapped (BEH) is a division of the U. S. Office of Education, HEW. The Education Amendments of 1974 (Section 625) authorize BEH to award grants to postsecondary educational institutions for the development of comprehensive services to physically handicapped students. The Regional Education Program has two main priorities. One is that the institution apply for funds to adapt existing programs to the needs of the handicapped. A second is that the institution serve either several states or a large population within one state. In less populated areas, a consortium of institutions (either public or private, non-profit or a combination--but not proprietary institutions) could apply, thus increasing the population base to be served without having to involve more than one state.

FY 77 guidelines for these funds should be available in the fall of 1975. The guidelines and application forms can be obtained from Melvin Ladson, Coordinator of Regional Education Programs.

Career Education Program

The Office of Career Education of the U. S. Office of Education is authorized (Education Amendments of 1974, Section 406) to award grants for the purpose of improving the implementation of career education within the United States. Community colleges are eligible for these funds. Guidelines for FY 76 included as a priority:

> Activities designed to demonstrate the most effective methods and techniques in career education for such special segments of the population as handicapped, minority, low income, or female youth.

For program information relative to FY 77 grants, contact the Office of Career Education.

Fund for the Improvement of Postsecondary Education

The Fund for the Improvement of Postsecondary Education, a relatively new unit within HEW, has identified eight purposes for which grants and contracts may be awarded:

- encouraging the reform, innovation, and improvement of post-secondary education and providing equal educational opportunity for all;
- the creation of institutions and programs involving new paths to career and professional training, and new combinations of academic and experimental learning;
- the establishment of institutions and programs based on the technology of communications;
- the carrying out in postsecondary educational institutions of changes in internal structure and operations designed to clarify institutional priorities and purposes;
- the design and introduction of cost-effective methods of instruction and operation;
- the introduction of institutional reforms designed to expand individual opportunities for entering and re-entering institutions and pursuing programs of study tailored to individual needs;
- the introduction of reforms in graduate education, in the structure of academic professions, and in the recruitment and retention of faculties; and
- the creation of new institutions and programs for examining and awarding credentials to individuals, and the introduction of reforms in current institutional practices related thereto.

Though the guidelines do not specifically refer to handicapped students, an innovative proposal focusing on the postsecondary educational issues for this population would be considered.

Inquiries should be addressed to the Fund for the Improvement of Postsecondary Education.

Division of Occupational Education, Massachusetts Department of Education

Federal vocational education funds (through the Vocational Education Amendments of 1968) are a primary source of funding for community colleges to accommodate handicapped students. These funds are distributed through the Division of Occupational Education, which holds workshops each fall to acquaint community colleges with guidelines, schedules, and procedures for applying to obtain vocational education funds. The president of each community college receives the announcement of the fall workshop; staff persons especially interested in funding for handicapped students should contact the office of the college president or the administrative assistant to the president to inquire about attending.

Proposals are submitted to Patrick J. Weagraff, Associate Commissioner, Division of Occupational Education. A copy of the proposal should also be forwarded to Michael Najarian, Director of Programs, Massachusetts Board of Regional Community Colleges.

RESOURCES

Persons & Organizations

COMMUNITY COLLEGE PERSONNEL

BUNKER HILL COMMUNITY COLLEGE

Dr. Pearl G. Waterhouse
Dean of Student Services
Rutherford Avenue
Charlestown, MA 02129
(617) 241-8600

MASSACHUSETTS BAY COMMUNITY COLLEGE

George I. Blaisdell
Dean of Men
57 Stanley Avenue
Watertown, MA 02172
(617) 926-2600

MOUNT WACHUSETT COMMUNITY COLLEGE

Thomas Keene
Rehabilitation Project Director
Student Personnel Services
Elm Street
Gardner, MA 01440
(617) 632-6600

NORTH SHORE COMMUNITY COLLEGE

Ann Coles, Assistant Director
Special Services for Disadvantaged Students
3 Essex Street
Beverly, MA 01915
(617) 927-4850

NORTHERN ESSEX COMMUNITY COLLEGE

David H. Lipsey
Counselor-Coordinator for Handicapped Students
100 Elliott Street
Haverhill, MA 01830
(617) 374-0721 X 229

SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

Jacqui Bailey
Counselor-Special Services
Armory Square
Springfield, MA 01105
(413) 781-6470 X43

MASSACHUSETTS COMMISSION FOR THE BLIND

39 Boylston Street
Boston, MA 02116
(617) 727-5550

MASSACHUSETTS REHABILITATION COMMISSION

296 Boylston Street
Boston, MA 02116
(617) 727-2183

REHABILITATION SERVICES FOR THE DEAF OFFICE

Massachusetts Rehabilitation Commission
Alfred Sonnenstrahl
Coordinator, Programs for the Deaf
296 Boylston Street
Boston, MA 02116
(617) 727-2184

Lois Willet
Supervisor
80 Boylston Street - Room 660
Boston, MA 02116
(617) 426-7224

Funding

BUREAU OF EDUCATION FOR THE HANDICAPPED

U. S. Office of Education
Melvin Ladson
Coordinator of Regional Education Programs
Regional Office Building - Room 2018
400 Maryland Avenue, S.W.
Washington, DC 20202
(202) 245-9722

DIVISION OF OCCUPATIONAL EDUCATION

Massachusetts Department of Education
Patrick J. Weagraff
Associate Commissioner
178 Tremont Street
Boston, MA 02111
(617) 727-5736

A copy of the proposal should also be sent to:

Michael Najarian
Director of Programs
Massachusetts Board of Regional Community Colleges
Custom House Plaza
177 Milk Street
Boston, MA 02109
(617) 727-2876

FUND FOR THE IMPROVEMENT OF POSTSECONDARY EDUCATION

U. S. Department of Health, Education and Welfare
400 Maryland Avenue, S.W.
Washington, DC 20202

OFFICE OF CAREER EDUCATION

U. S. Office of Education
Regional Office Building Three - Room 3100
7th and D Streets, S.W.
Washington, DC 20202

SPECIAL SERVICES FOR DISADVANTAGED STUDENTS PROGRAM

Grace Ward, Program Officer
Special Programs
U. S. Office of Education
HEW Region I
1500 JFK Federal Building
Government Center
Boston, MA 02203
(617) 223-4540

Publications

Education of deaf and hard of hearing adults in established facilities for the normally hearing. Gwenyth R. Vaughn. Pocatallo, Idaho: Idaho State University. 1967.

Wallace Memorial Library (ILL)
Interlibrary Loan
Rochester Institute of Technology
One Lomb Memorial Drive
Rochester, NY 14623

Improved vocational, technical, and academic opportunities for deaf people: research component. Final report. William N. Craig and Nona L. Burrows. Pittsburgh, PA: Pittsburgh University. 1969. ED 043 159. $.94 microfiche, $5.96 hard copy, pre-paid.

ERIC Document Reproduction Service
Box 190
Arlington, VA 22210

Improved vocational, technical and academic opportunities for deaf persons. Final report. 1974. Free.

Robert R. Lauritsen
Project Coordinator
St. Paul Area Technical Vocational Institute
235 Marshall Avenue
St. Paul, MN 55102
(612) 227-9121

Principles basic to the establishment and operation of postsecondary education for deaf students. E. Ross Stuckless (ed.). 1973. Free.

Conference of Executives of American Schools for the Deaf
5034 Wisconsin Avenue, N.W.
Washington, DC 20016

4

ARCHITECTURAL ACCOMMODATION

Fortunately, most community colleges in Massachusetts are either totally or partially free of architectural barriers. It is evident from responses to the physical plant questionnaires that those colleges which are not adequately accessible are cognizant of the need to modify their facilities; barriers exist on these few campuses because the buildings are old and funds for renovation are scarce, not because community college administrators lack commitment to ameliorating the problem. Thus it will not be necessary in this chapter to sensitize administrators to the need to eliminate barriers. Rather, the chapter will present the new rules and regulations of the State Building Code that will govern the modification of existing buildings and construction of new community college facilities.[1] Methods of planning for architectural accessibility, including the formation of a special committee at the community college, informational resources that can be used, and possible sources of funding will be discussed.

Rules and Regulations of the Architectural Barriers Board

In June, 1975 the Architectural Barriers Board of the Department of Public Safety promulgated the Rules and Regulations of the Specialized Code, Section 19 of the State Building Code, Chapter 23B, which supplant the previous ones that had been in effect. The specifications have been designed to promote ease of access to buildings and to make the buildings useable by and safe for persons who use wheelchairs, braces, or crutches, who walk with difficulty or insecurity, have faulty coordination, are blind, hearing impaired to the extent that they cannot hear warning signals, or disabled by aging.

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[1] Throughout this text, the numbers in parentheses refer to the sections of the regulations.

All new construction of community college buildings must conform to these specifications, construction being defined as:

> Work for which a building permit is required, work determined to be construction by a state or Local Building Inspector, or work for which a certificate of occupancy is necessary upon completion. (3.5)

The regulations will also apply when a building is reconstructed, altered, remodeled, or undergoes a change of use--as defined by the following:

> "RECONSTRUCTION": the tearing down, removal, demolition or replacement of a public building or part of a public building. (3.10)
>
> "ALTERATION": external or internal rehabilitation or renovation for which a building permit is needed or for which the cost of such rehabilitation or renovation equals or exceeds five (5) percent of the full and fair cash value of the buildings, or any work determined to be alteration by a State or Local Building Inspector. (3.2)
>
> "REMODELING": modification beyond an interior decoration or involving any structural change, or the refurbishing, updating, or redecorating of a public building for which the cost of such refurbishing, updating, or redecorating equals or exceeds five (5) percent of the full and fair cash value of the building. (3.11)
>
> "CHANGE OF USE": varying the utilization of a building or part of a building to one in which the building is open to and used by the public. (3.4)

When a facility undergoes alteration, remodeling or a change of use, the extent to which the facility must be made accessible is determined by the following criteria:

> If the work being performed amounts to more than five (5) percent but not more than twenty-five (25) percent of the full and fair cash value of the facility, only that portion of the work being performed shall comply with these Regulations. (3.12B)
>
> If the work being performed exceeds twenty-five (25) percent of the full and fair cash value of the facility, the entire facility shall comply with these Regulations. (3.12C)

While reading this chapter, keep in mind that the scope of the modifications required may at times differ according to whether the building is being constructed, reconstructed, altered, remodeled, or changed in use.

Accessibility Features

The following sections on accessibility features will present most of the requirements in Massachusetts that are relevent to community colleges. Additional information to clarify certain elements involved in the mandated requirements will be presented; and some suggestions will be made regarding further provisions, beyond those required by law, which are useful to physically disabled persons.

The supplementary information has been culled primarily from five major resources:

Barrier-Free Design: Accessibility for the Handicapped. Tica and Shaw.

Designing for the Disabled. (Second Edition). Selwyn Goldsmith.

An Illustrated Handbook of the Handicapped Section of the North Carolina State Building Code. Mace and Laslett.

Barrier Free Site Design. U. S. Department of Housing and Urban Development.

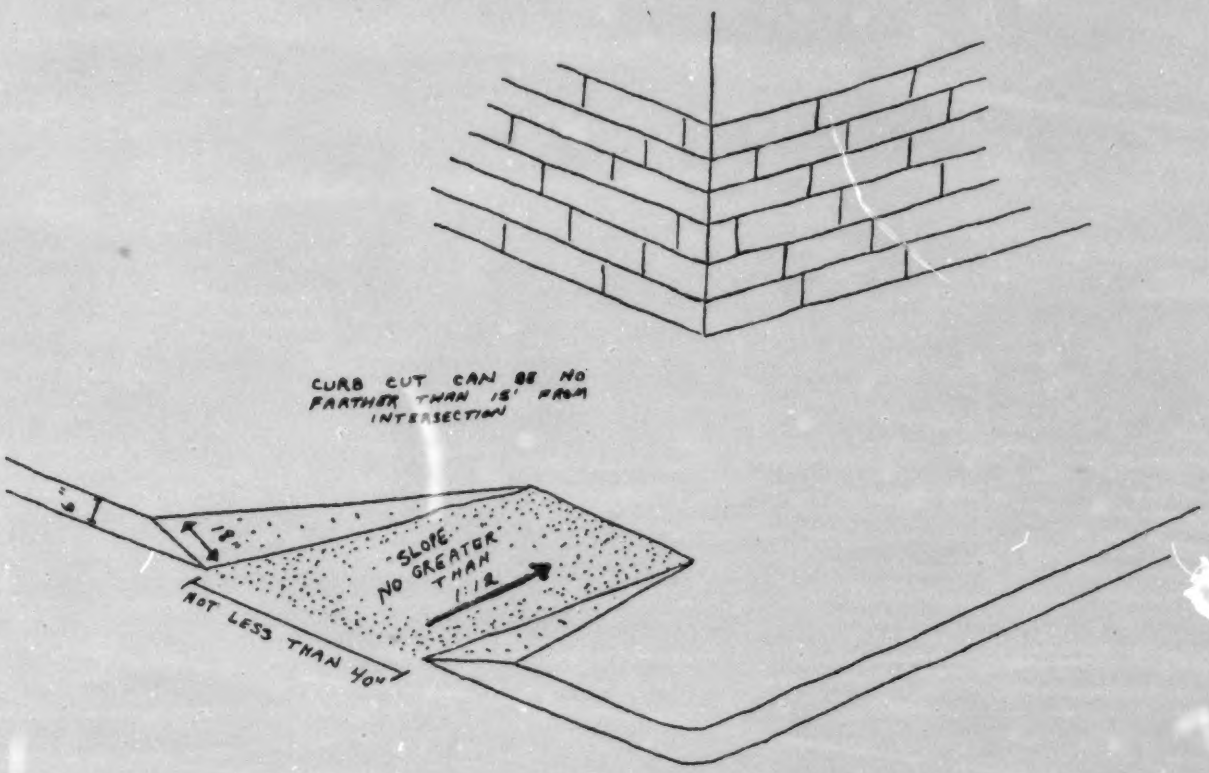
Making Facilities Accessible to the Physically Handicapped. New York State University Construction Fund.

Community colleges wishing to gain a clearer understanding of architectural accessibility, or endeavoring to perform some of the simpler structural adaptations themselves, should acquire these materials. Although the exact specifications mentioned therein may vary from the Massachusetts specifications, the graphics and texts can help elucidate what the features look like and why they are necessary. The first resource listed, that by Tica and Shaw, has specifications closest to those in Massachusetts. Many groups have recommended that the Architectural Barriers Board produce a similar type handbook relative to the Massachusetts Regulations; hopefully the Board will develop one in the near future.

Site Conditions (Section 4)

Section 4.1 of the Regulations mandates curb cuts wherever sidewalk curbs are being constructed or reconstructed. The curb cut is a gradually slanting well in the sidewalk which blends to the level of the street.[2] Curb cuts must be located adjacent to all corners of an intersection, at the street crossing. They should be located within 15 feet from the corner. If the construction or modification is taking place on only one side of the street, a curb cut must also be installed on the opposite side(s) of the street. The curb cut should have:

- A gradient of no greater than 1:12
- A width of 40 inches or greater
- Sides that are sloped and that are no less than 18 inches in width at the curb
- A surface painted with yellow non-slip paint
- The area of the street that leads to the curb cut painted with yellow non-slip paint.



[2] It should be noted that the curb ramp, that is, a ramp extending from the top of the curb down into the street, cannot be substituted for the curb cut. Curb ramps can be hazardous, interfere with drainage, and cause difficulty in street maintenance such as snow plowing.

The surface of the curb cut must be textured so that it can be identified by persons with visual handicaps. Do not use a corrugated surface, since the grooves can fill with water, freeze and become slippery. A texture such as broom-finish concrete is preferable.

Section 4.2 requires a disembarking area at a public entrance where people can be dropped off from, or picked up in, vehicles. Barrier Free Site Design suggests that the disembarking area or "drop-off zone" should be at least 12 feet wide, the length of at least 2 cars (50 feet), and if the sidewalk is curbed, one small 1:6 ramp per space should be installed. Signs should indicate that it is a disembarking area, and that parking is prohibited.

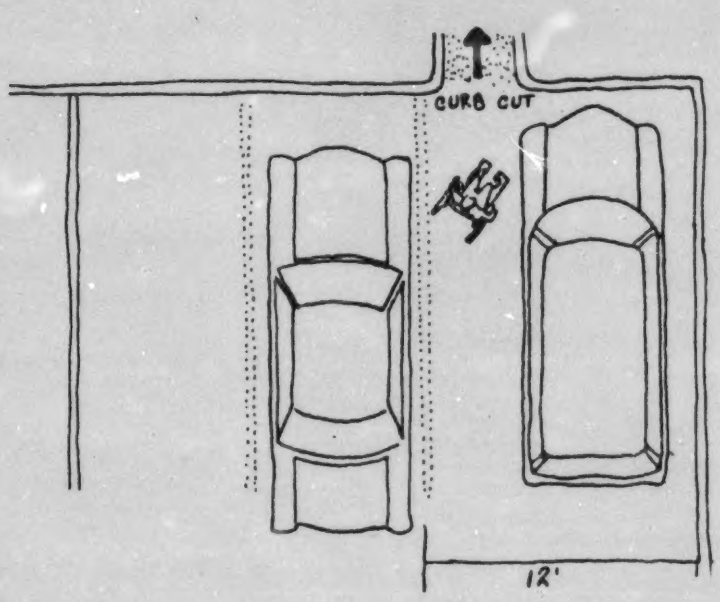
Site grading and drainage of topography, according to Section 4.4, should be designed to avoid a surface build-up of water, a flow of water across sidewalks or the formation of ice. Keep in mind that drainage structures should not be placed in heavily traversed areas and should be flush with the ground. Curbs can be no higher than 6 inches at intersections (4.1.5).

Parking Spaces, Lots and Garages (Section 5)

Parking spaces, lots and garages must have specially reserved spaces located closest to the entrance of the building (5.1). The number of reserved spaces is dictated by a formula based on the total number of spaces present in the parking area (5.5). They should be marked by a sign depicting the International Wheelchair Symbol, placed between 6 to 10 feet above the ground (5.2). Light images on a dark background are preferable for ease of reading and clarity from distances.

Perpendicular (90°) and diagonal (angled) parking spaces should be 12 feet wide and on a level surface suitable for wheeling and walking (5.3). When there are sidewalks at parking areas, curb cuts must be installed at

each space so that individuals will not have to cross a traffic area or wheel behind parked cars in order to get to a sidewalk (5.4). Gradients of parking surfaces should not exceed 5% (5.7).



The Massachusetts regulations do not discuss parallel parking spaces, but it should be noted that spaces for this type of parking must be 12 feet wide and 24 feet long.

Walks (Section 6)

Walks must be at least 48 inches wide with a slope no greater than 1 in 20 or 5%. If the slope is greater than 1 in 20, the walkway should be treated as a ramp, that is, according to the specifications of Section 7 of these regulations (6.1). Walks should have a continuous common non-slip

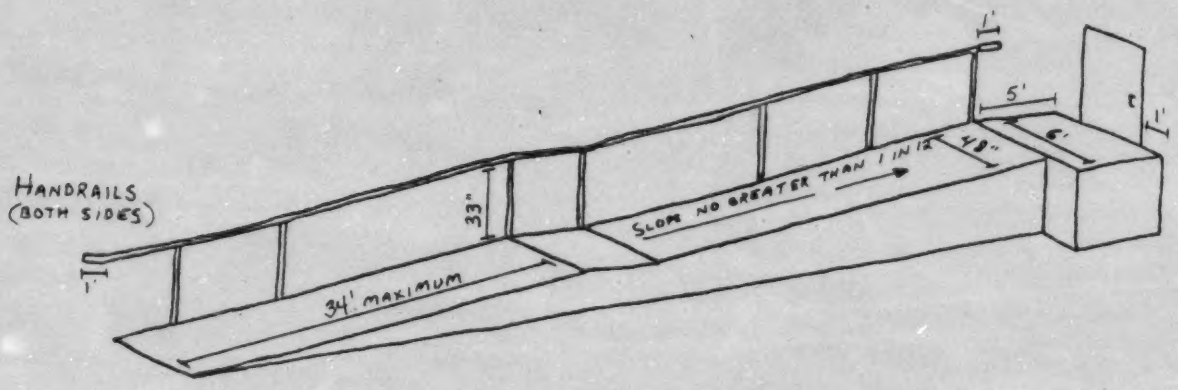
surface with no changes in level that are greater than ½ inch (6.2). Slippery materials such as paint, varnish or wax should not be used (6.3). It is also advisable to keep the use of expansion and contraction joints to a minimum. See Barrier Free Site Design (p. 22) for an excellent diagram on the characteristics of 16 different walkway surfaces.

When a walk intersects with another walk, street, etc., the intersections should blend to a common level, with installation of a curb cut if necessary (6.4). When the walk leads up to a doorway there should be a level platform right in front of the door. If the door opens toward the walkway, the platform should be at least 6 feet wide across the doorway and 5 feet deep. If the door does not swing toward the walkway, the platform may be 5 feet wide and 5 feet deep. In both cases the platform should extend at least 1 foot beyond each side of the door (6.5 and 6.6).

Walkways should be inspected periodically for needed repairs. Proper maintenance ensures ease of accessibility and safety not only for mobility-impaired persons, but also for able-bodied persons. An additional safety factor recommended in Barrier Free Site Design (p. 22) is the installation of wheelstops along the side of the walkway to prevent wheelchairs from rolling into hazardous areas. Wheelstops should be 2 to 3 inches high and 6 inches wide and should have breaks every 5 to 10 feet so that water can drain off the walk.

Ramps (Section 7)

Ramps should be installed for persons who cannot use stairs. However, ramps cannot replace stairs: persons with certain types of mobility limitations cannot use ramps, and can more easily negotiate stairs. Ramps can be no steeper than 1 in 12 (7.1), should be at least 48 inches wide (7.2), and must have a level clearance for a distance of at least 5 feet at the lower end (7.7).



The surfaces must be non-slip: the regulations suggest use of such surfaces as blacktop or wood-float, broom-finish, or exposed aggregate concrete (7.4). Other surfaces mentioned in the literature are rubber and carborundum grit. The application of varnish, paint or wax, or any other slippery materials is prohibited (7.4.1). The only carpeting allowed on ramps is that which is dense, "of low pile, non-absorbent, tautly fitted and glued without backing." Carpeting must be secured at the end of the path of travel with an edging strip that is no higher than 3/8 inch (7.4.2).

Although not called for in the Massachusetts regulations, there are two additional elements to be considered in installing ramps. Low curbs, about 2 inches high, along the sides of the ramp, provide a surface against which the wheelchair-user can turn the wheels in order to stop quickly. Also, given the weather conditions in most of Massachusetts, it is advisable to build in a melting device to remove snow and prevent water from freezing over.

Section 7.3 sets forth the requirements that handrails shall:

- Be installed on both sides of the ramp at a height of 33 inches
- Extend 1 foot beyond the top and bottom of the ramp
- Have smooth hand-grip areas that are 1¼ to 2 inches in diameter, and oval or rounded in shape since squared-off handrails do not allow hands to use natural opposing grip
- Have at least 1½ inches of clear space from the handrail to the wall to allow room to grip the rail.

When a ramp leads to a doorway, there should be a level platform before the door. If the door swings onto the platform, the level area must be 6 feet across and 5 feet deep. If the door does not open onto the platform, the area may be 5 feet wide and 5 feet deep. In both cases there should be 1 foot of clear floor space extending beyond the latch side of the door (7.5 and 7.6). Level platforms must also be provided at least every 34 feet and whenever the ramp changes direction (7.8).

Entrances (Section 8)

If a building is being altered or remodeled, the primary public entrance/exit must be made accessible to wheelchair-users. When reconstruction or new construction is being performed, and there are two or more primary public entrances/exits, at least two of them must meet with the accessibility standards (8.1). At least one of the public entrances must be on a level which is accessible to an elevator (8.3).

A paved walk should approach the building entrance. This walk should have a non-slip surface which is pitched for drainage, and the slope may not be over 1 in 20. If these specifications are not met, then the installation of a ramp is necessary (8.2).

Lobbies, foyers and vestibules have to be at least 7 feet long. If they have single doors, there should be a 1 foot clear space next to the latch side of the door (8.4).

Doormats should be less than ½ inch thick and secured to the floor around all the edges. Doormats that are thicker than this must be recessed into the floor. Openings in grates should be no greater than 5/8 inch in the least direction (8.5). For example, if a grid composed of parallel bars is used, the opening areas can be any length, but not more than 5/8 inch wide. The North Carolina State Building Code asserts that grates at doorways should actually be avoided unless the grid opening is 3/8 X 3/8 inch or smaller; larger grids make wheelchair travel difficult and can be hazardous for people using canes and crutches.

The path of travel cannot be impeded by obstacles (8.5). Fixtures and other objects protruding into the entranceway must be at least 80 inches above the floor. Door closing mechanisms "...shall not remain within the opening of a doorway when a door is open and shall not protrude hazardously into entrances or corridors when the door is closed." The closing speed shall be set at not less than six seconds (8.6).

When a building's primary entrance is not accessible to persons in wheelchairs, a sign should indicate the location of the accessible entrance (8.7).

Doors and Doorways (Section 9)

Doors that are in the path of travel should be at least 36 inches wide. Pivoted and balanced hardware doors should have a minimum clear space of 34 inches (9.1). Where there is a pair of doors, each door must meet these requirements (9.2).

Designing for the Disabled provides numerous additional recommendations, including the following:

- When a side-hung door is placed near a corner, the hinge side of the door should be on the side closest to the corner.
- Doors to small rooms should open out instead of in.
- Automatic opening doors triggered by a sensing device are recommended, provided that the time delay for closing is adequate --at least 4 to 6 seconds.
- Heavy double action swinging doors should be avoided.

Exterior doors should not require pressure of over 15 pounds to operate, while the pressure needed for interior doors should be no greater than 5 pounds (9.3). To prevent damage to doors, and to provide an adequate pushing surface for wheelchair bumpers, kickplates from the bottom of the door to a height of 16 inches can be affixed to the door.

Interior thresholds should be level with the floor. Thresholds at exterior doorways can be no higher than ½ inch, and should be beveled (9.4). Sliding door guides that project above the floor surface should be avoided.

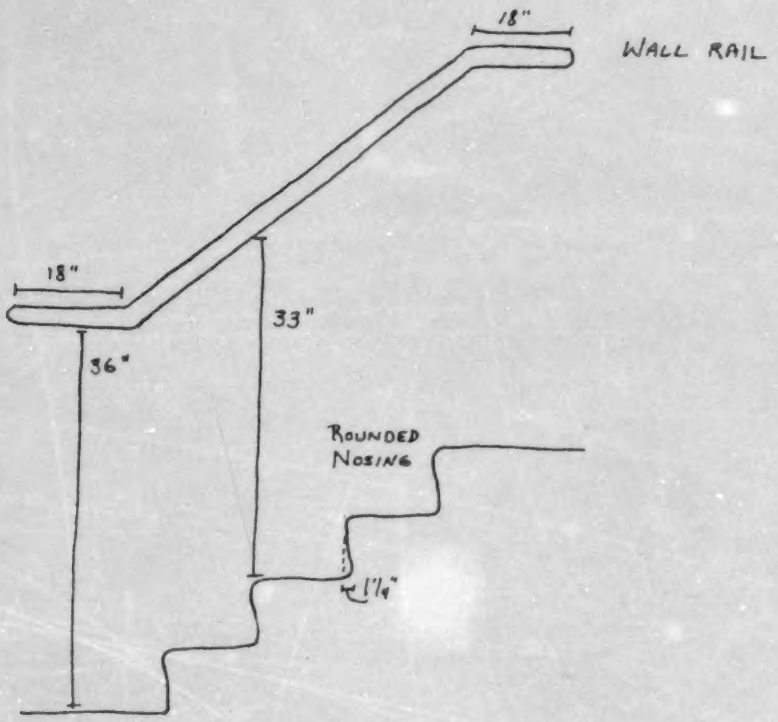
The floor on each side of the doorway should be level for a length of 5 feet. Where there is a single door there must be a clear space extending 1 foot beyond the side of the door where the door-opening hardware is located (9.5). The hardware should be from 36 to 42 inches above the floor. Door knobs are to be avoided since they cannot be easily gripped by persons with hand impairments; hardware such as levers, push plates, pull bars, or panic bars are required (9.6). The door should require only one hand and a single effort to open and should require only one hand to unlock and open it (9.8).

Often when there is a revolving door in use, the regular door next to it is locked. This is prohibited, for revolving doors are not useable by persons with mobility impairments (9.8).

Knurled door hardware is necessary to warn visually impaired persons of dangerous areas (9.9).

Stairs (Section 10)

Stairs required for legal entrance/exit must abide by regulations of this section. They must be located in the path of travel leading to the exterior doorway (10.2). Projected abrupt nosings are forbidden because of the difficulty engendered for persons with artificial limbs, braces, and impairments of the knee, ankle or hip; risers cannot slope more than 1¼ inches under the tread (10.3). According to the American National Standards Institute specifications, risers should be no higher than 7 inches.



Handrails must be installed on both sides of the stairs 33 inches above the edge where the tread and riser meet. Wall rails should extend for 18 inches beyond the top and bottom riser at a height of 36 inches above the floor (10.4). The part of the handrail that one grips must be 1¼ to 2 inches wide, and oval or round in shape (10.6). A 1½ inch space is necessary between the wall and rail (10.7).

The surfaces of the tread must be non-slip and the only carpeting allowed is that which is low pile, high density and without backing. Carpeting must also be tautly anchored to the riser (10.8).

Floors (Section 11)

The surfaces of floors must be non-slip. The criteria for a non-slip surface is one upon which a crutch may be placed at an angle of 70°, without slipping when the surface is wet (11.1). A chart estimating the non-slip characteristics of various types of floor surfaces may be found in Designing for the Disabled (p. 83).

Each story of a building must be on a common level. If it is not, then a ramp must connect the different levels (11.2).

The specifications for floor carpeting are the same as those indicated for stair carpeting. When an edging strip is used, it cannot protrude more than 3/8 inch above the floor (11.3).

Public Toilets (Section 12)

An Illustrated Handbook of the Handicapped Section of the North Carolina State Building Code contains an excellent section on rest rooms. Lucid diagrams clarify the problems of inaccessibility encountered in most standard public toilets and illustrate the various designs which allow for the accommodation of wheelchair-users. Although the measurements given vary somewhat from those required in Massachusetts, the basic design features do pertain to the Massachusetts regulations.

The main area of the rest room (that between the toilet stalls and lavatory) should have a 5 X 5 foot clear floor space, measured at the toe space level, so that a wheelchair can turn around without bumping into fixtures (12.2). Toe space level is not defined in the Massachusetts regulations; however the North Carolina State Building Code defines it as a height of 8 3/4 inches from the floor. The vestibule--the area

leading from the outside door of the restroom into the interior--should have a 36 inch wide door with 1 foot of clear space next to the latch side of the door; this area should be at least 6 feet long (12.3).

The public rest room must have at least one toilet stall with the following features (12.4):

- Width of 66 inches and length of 72 inches
- Where a door is used, one that is 36 inches wide and opens outward or slides
- Pull device at the hinge side or an automatic closing device to assist in closing the door
- Door lock located 36 inches above the floor
- Toilet located so that measurement from the center of the toilet to one of the side walls is 18 inches
- Two grab-bars, each 4 feet long and 1¼ inches in diameter
- One grab-bar centered on the rear wall, the other on the wall closest to the toilet, both 33 inches above the floor
- Clearance between grab-bar and wall of 1½ inches
- Grab-bar fastened to wall at center and at both ends
- Toilet seat set at 18 inches above floor
- Toilet fixture having a narrow, deeply recessed base

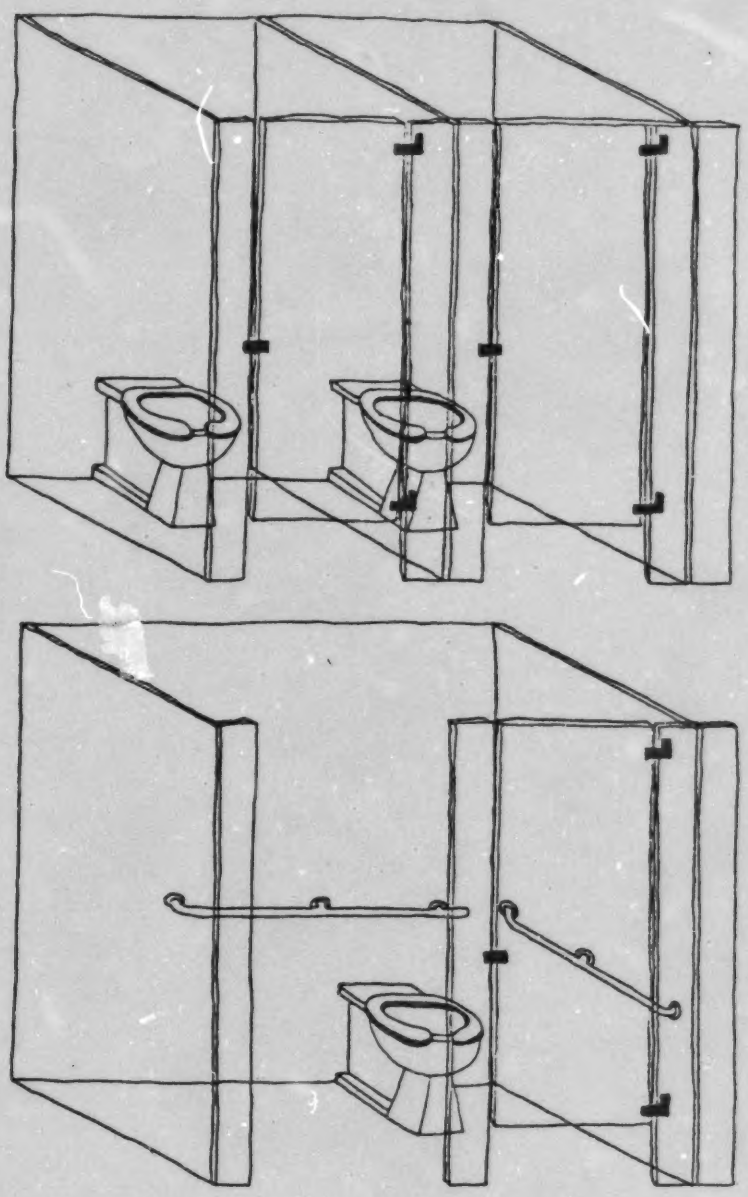
Urinals must be wall-mounted with the basin rim 15 inches above the floor. (12.9).

The publication Barrier-Free Design: Accessibility for the Handicapped (p. 16) suggests that the following procedure can be used to renovate an existing series of bathroom stalls.

1. Remove the dividing panel between two of the stalls.
2. Remove one of the toilet fixtures.
3. Permanently close the door opposite remaining seat.
4. Enlarge doorway opposite removed toilet fixture.

5. Install curtain or single 36 inch door opening outward (with lever type handle if possible).

6. Install grab-bars along side and rear walls adjacent to toilet fixtures.



Sinks should be either wall-mounted or counter-type. If the counter type is used, it must have an open knee space at least 32 inches wide under the counter (12.5). The knee spaces underneath both types must be 30 inches from the floor to the underside of the apron and 24 inches deep (12.6). Drain pipes and hot water pipes should not project into the knee space and should be insulated or guarded (12.7). Spring-activated faucets are prohibited (12.5).

Mirrors and shelves should measure 40 inches from the floor to the top of the shelf or bottom of the mirror (12.8). Dispensers and drying devices are to be located so that operating mechanisms (coin slots, push buttons, etc.) are located about 40 inches from the floor (12.10).

Elevators (Section 13)

Buildings that have two or more levels must have an elevator or ramp connecting each level (13.1). Both the required width of the elevator door when opened and the size of the cab depend on the type of work being performed. When construction or reconstruction is being performed, the minimum clear width necessary is 36 inches. When a facility is altered, remodeled, or undergoes a change of use, the clear opening must be at least 32 inches (13.2). In new construction the cab must be at least 48 inches wide and 54 inches deep; otherwise, it must measure at least 48 X 48 inches (13.3).

The elevator controls and emergency telephone can be placed no lower than 38 inches and no higher than 60 inches from the floor, so they can be reached by persons in wheelchairs. Controls with raised or recessed identifying numbers or letters, which are light on a dark background, are necessary for persons with visual handicaps, as are audible signals, with the "up" sound differentiated from the "down" sound. Raised or recessed floor numbers that are light on a dark background should be affixed to the right hand side (when exiting) of the door jamb at each level (13.4 and 13.5). Rub rails must be secured to the walls at a height of 36 inches (13.6).

For safety reasons, it is necessary to have a sensitive safety edge on doors and a sensing device to prevent them from closing while a person is entering or leaving the elevator. The doors should stay open for at least six seconds (13.7). It is also useful to time the doors so that they require at least 3½ seconds to close.

Water Fountains (Section 14)

Wherever there are water fountains or coolers, at least one shall be designed for use by persons in wheelchairs (14.1). Controls should be hand-operated, not spring-activated, with controls and spout located at the front. The stream of water should run parallel to the front of the fountain (14.2).

Where wall-mounted water fountains are used, the rim of the basin must be 34 inches above the floor (14.3). If floor-mounted fountains have a basin rim which is higher than 34 inches, provide either another lower fountain or a paper cup dispenser at 34 inches (14.4). For fountains in recessed alcoves, the recessed space must be at least 32 inches wide and the front of the fountain should be at the front of the alcove, so that persons using a wheelchair can closely approach it (14.5).

Public Telephones (Section 15)

Where telephones are provided for the public, at least one should be useable by a person in a wheelchair. The highest operating part can be no higher than 54 inches above the floor, assuming vertical access to the phone (15.1). There should be clear access to within 12 inches of the phone via at least a 30 inch wide space (15.3).

The receiver or handset should be adapted for use by hearing impaired persons who have a special telephone pickup feature on their hearing aids (15.2). The type of telephone adapter referred to in the regulations does not amplify sound, but rather generates a magnetic field that makes the hearing aid feature operate. Although not required in the regulations, it is also useful to have the handset of a coin telephone equipped with a switch that will amplify the voice being received.

Contact the local telephone company business office regarding the accessible positioning of a telephone, and adaptations for persons with hearing impairments, speech impairments and mobility restrictions. The telephone company will also provide an informative pamphlet, Services for Special Needs, describing the various features available from the Bell System.

Controls (Section 16)

Switches and controls for using lights, ventilation, windows, etc. should be located between 40 and 48 inches from the floor. Thermostats, intercoms and fire alarms cannot be higher than 56 inches and electrical outlets should not be lower than 24 inches (16.1). Doors with new hardware should have lever handles, panic bars or hardware other than door knobs (16.2).

Identification by the Physically Handicapped (Section 17)

Where there are identification signs, numbers or graphics in the path of travel, they should be raised or recessed and be light on a dark background. Braille notations can be used to supplement, but not to replace, the raised and recessed figures (17.1). Identifiers for room numbers and rest rooms should be placed between 60 and 66 inches high, located between 6 and 18 inches from the door jamb (17.2).

When a door leads to an area which might be dangerous to a visually handicapped person, the existence of the hazardous area should be identified by knurled or otherwise roughened door hardware (17.3).

Fire alarms and other such warning signals should use visual signals (for hearing impaired persons) as well as the standard auditory signals (17.4).

Places of Assembly (Sections 23 and 28)

Auditoriums must comply with all aforementioned regulations regarding entrances, doors, toilets, etc. In addition, there must be clear level space in the rear of the hall for persons in wheelchairs, each space being 5 feet long and 3 feet wide. The spaces can be on one side of the double aisle only, but if there is no double aisle, spaces should be on side aisles. In lieu of permanently clear spaces, it is permissible to have sections of fixed seating in the rear of the hall which can be readily removed when necessary (28.2). Amphitheaters with step seating should have spaces available via the main entrance level (23.3). For safety reasons, it is imperative that the designated areas for wheelchair occupants not interfere with other code requirements for exit facilities (28.3).

Cafeterias (Section 30)

Cafeterias should have dining areas with a clear path of travel 36 inches or more between occupied seating (30.2). Knee space under tables should not be smaller than 32 inches wide, 27 inches high and 12 inches deep from the edge of the table (30.5).

Food selection aisles must be at least 36 inches wide (30.3) and cutlery and food display rack should be within reach of a person in a wheelchair (30.4).

Interior Features for Education Facilities

Aisles between stacks in libraries must be 32 inches wide (19.3). Aside from this feature and the one regarding amphitheaters, no further specifications specifically related to instructional facilities are mandated by the Massachusetts regulations.

There are, however, a number of other factors to consider. The following suggestions have been taken from An Illustrated Handbook of the Handicapped Section of North Carolina State Building Code, and Making Facilities Accessible to the Physically Handicapped.

Tables, shop benches and laboratory stations should have clear knee spaces approximately 32 inches wide, 30 inches high from floor to underside of the work area and 24 inches deep. If there are aprons on the underside, they must be recessed at least one foot deep under the table. In some cases it may be necessary to raise a table so that persons with upper extremity restrictions can use mouth sticks to operate a typewriter or calculator.

Where there are fixed student desks and chairs, the chair should be removed and a clear space 42 inches long should be provided for the wheelchair. Aisles between fixed tables or work benches should have a width of at least 3 feet of unobstructed space. Electric and gas outlets, faucets, etc. should be side-mounted rather than rear-mounted, so they can be reached by persons in wheelchairs.

If at all possible, libraries should have soundproofed study rooms or carrels so that students may use tape recorders and typewriters and so that readers may assist blind students.

Planning for Architectural Accessibility

While it is usually the function of the architect, engineer, and builder to design and construct barrier-free facilities, community college personnel are not without responsibilities for planning the accessibility of their schools. The following section will discuss the composition and functions of a committee assuming these responsibilities, informational resources to assist the committee in its efforts, and possible sources of funding to eliminate barriers.

Committee Functions and Composition

An ongoing mechanism within the community college for planning architectural accessibility--a Committee on Architectural Accessibility--is advantageous both for colleges housed in older inaccessible buildings, and for colleges which have new campuses in compliance with architectural barriers legislation.

The need for such a committee at the few community colleges which have many architectural barriers is obvious. The Committee must identify barriers, monitor possible sources of state and federal and other types of funding for elimination of barriers, submit proposals for funds, and investigate ways in which renovations can be made at little cost.

At community colleges which are considered barrier-free, the need for an Accessibility Committee is less obvious, but exists nonetheless. While a facility may have been constructed in compliance with architectural barriers legislation, the facility may still not be accessible to an individual with a disability of a certain type or certain level of severity. Specifications for architectural accessibility are based on averages--e.g. the ramp gradient that an "average" wheelchair-user can manage. But disabled persons do not constitute a homogeneous group; some persons who fall outside the "average" category may find certain parts of the supposedly barrier-free environment to be inaccessible. The decision of whether or not to alter part of a facility to accommodate just one or a few disabled persons is too important to be left to one staff person. There should be a committee of persons to adjudicate such matters, particularly when they involve the issue of educational opportunity versus fiscal expenditures.

At both the older and newly constructed community colleges, an Accessibility Committee should serve an advisory role in the planning of future construction, site relocation, or acquisition of buildings.

Various departments within the community college should be represented on the Accessibility Committee. Obviously, the Coordinator of Handicapped Student Services and the Director of Physical Plant should participate. It is also important for an individual on the President's immediate staff --preferably one who monitors funding sources and writes grants--to be involved. Beyond having knowledge and skills in fund procurement, this individual is likely to be abreast of future plans for facility development. Thus she/he can serve as a liaison between the Committee, the

President, and other key planners--convening these parties when issues with a potential impact on accessibility arise.

At colleges which are only partially accessible, it is wise to include the Registrar on the Accessibility Committee. Of all persons at the community college, the Registrar is probably the one most intimately acquainted with the problems involved in scheduling and room assignments of classes in which mobility-impaired students are enrolled.

The Registrar is in an excellent position to advise community college planners on priorities vis-à-vis the disabled student for construction or renovation. When planning the construction or renovation of a building, the choice may exist as to whether a section of that building will house, for example, the computer center versus the chemistry laboratory; the Registrar may indicate to planners that one should have priority over the other. Possible factors bearing on such prioritization are inaccessibility and time. The present site for one may be accessible to wheelchair-users while the site for the other is not, or one may be located far away from the other rooms where students with that major must take classes, allowing insufficient time for disabled students to get from one required class to the next. While it is unrealistic to assume that priorities based on such factors will always be heeded, it is essential nevertheless to acquaint planners with such considerations.

Another person who can similarly contribute to the planning of accessibility is the mobility-impaired student him/herself. The student will have first-hand knowledge of the barriers to be eliminated and of the features necessary to adequately accommodate persons with mobility restrictions.

One member of the Committee should be designated as the contact person to whom disabled students or staff may report accessibility problems. This individual will bring the problem to the attention of the Committee, which will then:

1. Decide whether the problem merits attention
2. Investigate how the barrier can most cost-effectively be eliminated
3. Where little money is involved and the correction needed is minimal, take immediate action to have the plant maintenance staff eliminate the barrier
4. Where substantial money is involved, formally request such from the college administrator or apply for state, federal or other funds.

Informational Resources

Personnel wishing to eliminate existing barriers or to plan for barrier-free design of future construction may benefit from the experience of the individuals identified below. All have agreed to entertain specific inquiries from community colleges.

William Mullen, Adaptive Housing Coordinator for Massachusetts Rehabilitation Commission, has suggested that colleges wishing to systematically eliminate barriers should have an architectural survey performed, to identify barriers and to estimate the cost of eliminating them. Mr. Mullen is maintaining a list of architects in various parts of the state who are experienced in performing such a survey. Although he is primarily involved with the adaptation of residential dwellings, he may be able to suggest where equipment (e.g. wheelchair lifts) and materials (e.g. floor finishings) appropriate for educational facilities can be obtained.

Questions about the Rules and Regulations and about the functions of the Architectural Barriers Board within the Department of Public Safety may be addressed to Frank Quinn, the Board's Executive Director. Based on his experience, Mr. Quinn can provide college planners with rough cost estimates for eliminating some types of barriers; it should be kept in mind, however, that precise costing of a barrier elimination can be determined only through an actual on-site survey performed by an architect or engineer experienced in these matters.

Massachusetts Bay Community College has made a number of low cost modifications at both its Watertown and Wellesley campuses. MBCC carpenters performed some of the modifications, including the construction of ramps and special typing tables, thus eliminating outside labor costs. George Blaisdell, Dean of Men, will respond to inquiries regarding the techniques and materials used.

Copies of the Rules and Regulations of the Architectural Barriers Board (ABR-1) may be purchased from the Division of Public Documents at the State House.

A reference useful for personnel wishing to further study architectural accommodation is Barrier Free Design: A Selected Bibliography published by Paralyzed Veterans of America, Inc. This volume cites articles, periodicals, checklists, and texts on human factors involved in planning, architectural barriers specifications, transportation, housing, the accessibility of educational facilities and a number of other topics.

Another resource useful to community colleges is the Newsletter of the Committee on Barrier Free Design, published monthly by The President's Committee on Employment of the Handicapped. It reports on state and national efforts to remove barriers, and on publications, films, legislation, and funding.

Sources of Funding

There are few funding sources to which community colleges can apply for monies to make physical plant modifications. The state agencies from which one might obtain funds will be discussed below; while the likelihood of procuring funds from these sources is in no way guaranteed, they should be tapped nonetheless.

Capital outlay funds are available for the removal of architectural barriers in state buildings in Massachusetts. A consultant has been hired by the Bureau of Building Construction (Executive Office of Administration and Finance) to prioritize the allocation of these funds. This has been done in conjunction with the Special Commission on the Handicapped.

A community college may apply for capital outlay funds by forwarding a request to the Facilities and Sites Committee of the Massachusetts Board of Regional Community Colleges, with a copy to John Costello, Executive Director. The Committee reviews the request in terms of planning priorities for community colleges, and then submits it to the Executive Office of Educational Affairs. The request is then forwarded to the Bureau of Building Construction.

Where moderate amounts of money are necessary to eliminate barriers, the community college may include the cost under maintenence in its yearly budget request.

Technically, funds for building modification are authorized by Part B of the Vocational Education Amendments of 1968, which states in Section 122 that grants to states can be used for the "construction of area vocational education school facilities." Section 108 defines an area vocational school to include, "the department or division of a junior college or community college or university which provides vocational education in no less than five different occupational fields, under the supervision of the State Board, leading to immediate employment but not necessarily leading to baccalaureate degree." Section 108 also defines construction as "construction of new buildings and acquisition, expansion, remodeling, and alteration of existing buildings, and includes site grading and improvement and architect fees."

To date, however, the Division of Occupational Education, which administers the Vocational Education funds, has not granted any Part B funds for architectural accessibility projects. In the fall, the Division

of Occupational Education will conduct workshops for community college administrators regarding funding procedures; it is suggested that community colleges discuss the use of Part B funds with personnel from the agency at that time.

Another possibility for securing funds for accessibility is to include architectural barrier elimination costs as part of a proposal to the Division of Occupational Education to develop a vocational educational program for disabled students. Procurement of barrier elimination funds via this route should also be discussed in the fall workshop. (Additional information regarding funding through this agency may be found in the chapter "Program Management.")

RESOURCES

Persons & Organizations

BLAISDELL, GEORGE I.

Dean of Men
Massachusetts Bay Community College
57 Stanley Avenue
Watertown, MA 02172
(617) 926-2600

BUREAU OF BUILDING CONSTRUCTION

1 Ashburton Place
Boston, MA 02108
(617) 727-4050

MASSACHUSETTS BOARD OF REGIONAL COMMUNITY COLLEGES

Facilities and Sites Committee

AND

John V. Costello, Executive Director
177 Milk Street
Boston, MA 02109
(617) 727-2876

MULLEN, WILLIAM

Adaptive Housing Specialist
Massachusetts Rehabilitation Commission
296 Boylston Street
Boston, MA 02116
(617) 727-2184

QUINN, FRANK

Executive Director
Architectural Barriers Board
1 Ashburton Place - Room 1311
Boston, MA 02108
(617) 727-3692

SPECIAL COMMISSION ON THE HANDICAPPED

State House, Room 26
Boston, MA 02133
(617) 727-8215

Publications

Barrier-free design: accessibility for the handicapped. Phyllis L. Tica and Julius A. Shaw. 1974. $1.50.

Institute for Research & Development in Occupational Education
Center for Advanced Study in Education
The Graduate School and University Center
City University of New York
1411 Broadway
New York, NY 10018

Barrier free design: a selected bibliography. Peter L. Lassen. 1973. $5.00.

Architectural Coordinator
Paralyzed Veterans of America, Inc.
7315 Wisconsin Avenue, N.W.
Suite 301W
Washington, DC 20014

Barrier free site design. Washington, DC: Superintendent of Documents, U. S. Government Printing Office. 1975. Free.

Office of Policy Development and Research
Room 8146
U. S. Department of Housing and Urban Development
Washington, DC 20410

Designing for the disabled. Selwyn Goldsmith. Second edition. 1967. $17.25.

McGraw Hill Book Co.
Order Services
Princeton-Hightstown Road
Hightstown, NJ 08520

An illustrated handbook of the handicapped section of the North Carolina State Building Code. Ronald L. Mace and Betsy Laslett. 1974. $1.50.

North Carolina Department of Insurance
Attention: Ms. Minnie White
Wake County Courthouse
P. O. Box 26387
Raleigh, NC 27611

Making facilities accessible to the physically handicapped. 1967. Unable to verify. May be available from the following source.

New York State University Construction Fund
194 Washington Avenue
Albany, NY 12210

Newsletter of the Committee on Barrier Free Design. Free.

President's Committee on Employment of the Handicapped
Washington, DC 20210

Services for special needs. Free. Contact your local Bell Telephone Business Office.

Rules and Regulations of the Architectural Barriers Board. (ABR-1). $.60.

Division of Public Documents
State House, Room #116
Boston, MA 02133
(617) 727-2834

5
ADMISSIONS

In responding to the Admissions questionnaire, admissions personnel have indicated the number of disabled students who applied to and were subsequently accepted at community colleges. On the basis of these figures, it is apparent that the open admissions policy of Massachusetts community colleges applies equally to disabled and able-bodied students. Thus on a whole, the admissions process vis-à-vis disabled students will serve primarily a planning function, rather than a screening function. Those instances when the admissions process will be used as a screening tool are discussed below. Factors relative to the planning function and topics for the admissions interview are then presented.

Screening Process

The open admissions policy does not apply to certain allied health career programs which have entrance criteria relative to academic and health qualifications. Screening applicants to allied health programs on the basis of academic qualifications does not constitute a bias against physically disabled persons; however, screening on the basis of health qualifications does hold potential for inequity. While there may be instances where the student's disability realistically prevents him/her from adequately performing tasks in a certain allied health career, rejecting an applicant solely because he/she has a certain handicap, without knowing anything else about the applicant, is at best an illogical practice--at worst, a discriminatory one.

When an individual's health condition is an issue in acceptance to an allied health program, the admissions committee should first assess the student's academic qualifications. Once academic eligibility is established, a thorough assessment of the student's physical capacities and limitations is in order. While the student's state agency counselor and/or secondary school counselor may be of help in such an assessment, it will most likely require the consultation of a physician. Since the

physician may not be familiar with the career in question, it is advisable to provide him/her with a description of tasks, equipment and materials involved.

Some questions to ask the physician to report on are:

- Does the applicant have the physical capacity and stamina to carry out the job tasks?
- Could performing the tasks and using equipment and substances involved with the job exacerbate the applicant's physical problems?
- Is the applicant taking any medication which could affect his/her ability to perform the tasks?
- Is it likely that the applicant's disability will affect his/her own safety or that of co-workers or patients?

Admissions personnel must also be familiar with the adapted equipment and procedures which disabled persons can use in training and on the job. Information and resources regarding such adaptations are discussed in the chapters "Counseling and Advisement," "Instructional Services," and "Job Placement."

Once it is determined that the applicant could academically and physically handle the training program and the job, it is necessary to consider certification requirements of the career. Whenever certification/licensure requirements bar persons with a particular disability or health problem, admissions personnel must stress this point with the applicant. However, the college should not automatically reject the applicant because of such certification stipulations. A talented and committed individual who is capable of pursuing a career, and who is cognizant of the future barriers to certification/licensure, should be permitted to pursue his/her education and to challenge, if necessary, what may be inequitable restrictions.

A second consideration relative to admissions as a screening process concerns the extent to which the college can properly accommodate the

student. There are some community colleges which have architectural barriers in buildings or sites. The community college should inform applicants of these conditions and of the difficulties the barriers may present. However, the existence of architectural barriers does not necessarily preclude the student from attending the college. If classes and laboratories for the applicant's intended major are already located in accessible buildings, or if arrangements can be made to schedule classes and labs in accessible buildings, the student may be able to manage independently. When barriers do exist, the student may employ an attendant for assistance in moving from class to class. Most post-secondary institutions consider it the responsibility of the student to arrange for volunteer or paid mobility assistance, and not the respon i-bility of the college. If this is the policy at the community college, it should be made clear to the applicant. If the student is willing to undergo the difficulties engendered by an inaccessible campus, and to arrange for the assistance him/herself, then the student should most likely be accepted.

It is also necessary to determine whether the college can adequately accommodate the particular needs that some (not necessarily all) prelingually deaf students may have. Admissions personnel reviewing the application of deaf students should become familiar with the information and resources cited in this Guide relative to special programs and services for deaf students. By no means will all deaf applicants require a specialized program such as that described in the chapter "Program Management"; however admissions personnel should be aware that some students may, in fact, need accommodations beyond those existing at the community college. To determine whether the community college can adequately serve the deaf applicant, personnel should confer not only with the applicant, but also with his/her Massachusetts Rehabilitation Commission and secondary school counselors, and if necessary, with the applicant's parents. Results of psychometric tests may be of some use in assessment, but must be interpreted cautiously (see chapter "Counseling and Advisement"). And as indicated in the next section of this chapter,

a personal interview is helpful in determining whether the community college is appropriate for the student.

Admissions Interview as a Planning Tool

An opportune time for the community college to begin planning specific arrangements for the individual student, and for the student to start preparing for his/her postsecondary education, is at the admissions interview. A number of Massachusetts community colleges regularly conduct such interviews with disabled students as part of the admissions process. The interview is generally conducted by one or more of the following personnel: admissions officer; counselor/coordinator of the Office for Handicapped Students; and department chairperson. If the applicant consents, it is acceptable for his/her Massachusetts Rehabilitation Commission or Massachusetts Commission for the Blind counselor to be present.

At the interview the community college can secure information on the specific arrangements to be made for the student in the following areas:

- Scheduling of classes in accessible buildings
- Arranging for support services
- Modifying instructional and testing procedures
- Assessing what course load is feasible for the student
- Providing necessary equipment
- Designing a remedial/preparatory program.

As a planning tool for the student, the interview can clarify what services exist at the college and what responsibilities the student will have in meeting the demands of his/her postsecondary education. The student can prepare to meet these demands by:

- Upgrading skills (e.g., typing)
- Acquiring the necessary equipment
- Learning how to procure mediated materials

- Arranging for necessary support services and transportation
- Identifying special classroom needs which should be made known to the instructor.

At those community colleges which have an Office for Handicapped Student Services, the counselor or coordinator of this Office is the most appropriate person to conduct the admissions interview, for the interview can provide an opportunity both to develop rapport between the counselor/coordinator and the applicant and to encourage the applicant to utilize the services of the Office when he/she enrolls. The interviewer can begin by explaining the services at the college and by showing the student the campus. Once both parties feel at ease with one another, questions regarding the student's disability may be discussed.

The following interview topics are based on those developed by the Resource and Counseling Center for Handicapped Students at University of Massachusetts/Boston Harbor Campus and on guidelines presented in Herbert Rusalem's Guiding the Physically Handicapped College Student. Community college personnel may contact Andrea Schein and Lillian Ross at the Resource and Counseling Center to discuss the interview process. It may also be helpful to refer to the "Functional Analysis" checklists presented in Rusalem's text.[1]

The interviewer should find out from the applicant which classroom adjustments facilitate his/her learning. Partially-sighted and hearing impaired students may need particular lighting or seating in order to read and write or to speechread. Students with hearing problems may have difficulty understanding speech when the instructor's voice is of a certain pitch, or when there are background noises. The individual who

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[1] "The admission of physically handicapped students." In Herbert Rusalem, Guiding the physically handicapped college student. New York: Teachers College, Columbia University, 1962, pp. 61-65.

is not a proficient speechreader may require interpreter services in all classes. Students with sensory impairments may find it useful for the instructor to spell any new technical words or write them on the blackboard. Information on these needed adjustments can be forwarded to the instructor so he/she is prepared to accommodate the student.

It is possible that an applicant may not have considered how to take classroom notes, particularly if he/she did not have to take notes in secondary school, or if his/her disability occurred after previous schooling was completed. Thus it is important to discuss how notetaking will be accomplished. Taping class lectures can be viable for students with visual and manual limitations, but it is time-consuming to replay complete lectures when preparing for an exam. Hence it may be preferable for the blind student to take braille notes, and for the manually impaired or hearing impaired student to arrange for other students in the class to share notes. If taping is preferred, the student should have the necessary equipment.

Taking tests and writing papers may involve adaptations not necessary for the nondisabled student. Preferred procedures--oral administration of the test, using a typewriter or amanuensis for responding, taping papers--should be discussed at the interview. This information can then be relayed to instructors before the semester begins. When tests and papers are written at the college, rather than taken home, it is essential to have the proper type of equipment, for example, a tape recorder or typewriter which may need special adaptations. For many students, it is essential to have typing skills; if the student cannot type, he/she should be advised to develop this skill before enrolling or to take a typing course at the community college.

There are several factors regarding mobility to be addressed at the interview. Some visually impaired students will require mobility orientation to and around the campus. If the individual wishes to have a peripetologist perform this orientation, then he/she should arrange for this service through the Massachusetts Commission for the Blind, or other

agencies such as the Carroll Rehabilitation Center in Newton; otherwise, the community college can arrange for a sighted student to orient the new student to the campus. Similarly, the student who uses a wheelchair may need to have someone indicate accessible routes around the campus. When a person cannot propel the wheelchair him/herself, or when there are barriers, the interviewer should advise the applicant of his/her responsibility to schedule travel assistance. One should also determine whether the student will need early dismissal from class in order to have time to get to the next class, time intervals in scheduling classes, or elevator keys.

The admissions interview is an appropriate time to identify the student's needs and preferences relative to instructional materials and equipment. If it is determined that mediated materials are necessary, then the admissions officer or counselor/coordinator can advise instructors to provide the student with a list of required readings well before the semester begins. Ordering procedures for braille, large type and taped materials should be elucidated at the interview. When several students indicate that they could benefit from a certain type of equipment (e.g., an optical enlarger), the college might consider purchasing that piece of equipment.

Several health-related factors may be pertinent to planning for the student. If the student is known to have epilepsy, the interviewer may want to ascertain if the seizures are fully controlled. If they are not, ask the student if he/she wishes to notify instructors and other staff of this fact so that they will be prepared to deal appropriately with the student in the event that a seizure occurs. Information on the frequency and type of seizures may be important, since having a seizure in certain settings--in the laboratory or shop, for instance--could constitute a safety hazard. One may also inquire whether the person who has epilepsy or another health condition takes medication that produces fatigue, for this person may need a reduced course load.

Finally, it may prove advantageous to ask when the applicant had his/her last vision, hearing or rehabilitation evaluation. Staff of the Resource and Counseling Center at the University of Massachusetts report that they sometimes encounter applicants who have not had recent examinations. Having gone for an evaluation as recommended by the Center, some persons have obtained aids and devices (e.g., low vision aids) which have greatly facilitated their college work.

RESOURCES

Persons & Organizations

RESOURCE AND COUNSELING CENTER FOR HANDICAPPED STUDENTS

Lillian Ross and Andrea Schein
University of Massachusetts/Boston Harbor Campus
Boston, MA 02125
(617) 287-1900 X2923

Publications

Guiding the physically handicapped college student. Herbert Rusalem. 1962. $3.00.

Teachers College Press
Columbia University
1234 Amsterdam Avenue
New York, NY 10027

6
COUNSELING AND ADVISEMENT

The goals underlying the counseling of both physically disabled and able-bodied students are one and the same: to assist the counselee in attaining his/her fullest academic and occupational potential as well as personal and social adjustment. Except for the special considerations of communicating with some profoundly deaf students and testing students with physical limitations, the counseling techniques used with disabled persons are the same as those used with all students. The style most comfortable to the counselor and most efficacious in dealing with the gamut of issues presented by the community college student is the style that should be employed in counseling disabled students. The counselor can anticipate that disabled students will have problems quite similar to those of their able-bodied peers. These problems will not always relate to their handicap. Further, not all handicapped persons have similar types of problems, goals and expectations. There is not a unique personality configuration, life style or set of problems common to individuals with physical handicaps.

However, in working with disabled students, the counselor may have to deal with issues associated either directly or indirectly with the handicapping condition. This chapter, therefore, discusses disability-connected problems: the issues with which counselors are apt to have the least experience, given the relatively few numbers of disabled persons attending community colleges. Despite the thrust of the chapter, counselors should not conclude that the accommodation of physically disabled students is riddled with difficulties.

Attitudes Toward Persons who are Physically Disabled

There are a number of ways in which society erects roadblocks to the self-actualization of physically disabled persons. Perhaps the most insidious of these barriers are the attitudes of nondisabled persons

toward physically disabled persons--the tendency to view those with physical handicaps as inferior, helpless, psychologically different.

This section will provide an overview of the cognitive and affective factors underlying the formation of such attitudes. This material is presented to provide counseling personnel with insight into the reasons some instructors might respond negatively to the student in the class, into the attitudinal climate bearing upon the psychosocial development of disabled persons, and into the roots of the uneasiness counselors themselves might possibly feel in serving disabled students. Much of the following is based directly on the work of Beatrice Wright; reading her book Physical Disability--A Psychological Approach will provide a more detailed analysis of the response of both able-bodied and handicapped persons to physical disability.

There are often gross distortions in people's perceptions of the effect a physical disability has upon a person. As Wright and others have pointed out, there is a tendency to see an individual in terms of one characteristic and to allow that one characteristic to color the way we see the total person. Hence, some persons, when meeting Mr. X, who has an impairment of vision, will assume that all of Mr. X is impaired: one will shout at him (his hearing must be impaired) or address only his companion (Mr. X probably can't communicate too well, etc.). The "spread phenomenon,"[1] as it is called, can be based on any factor which, for our own reasons, we see as salient--be it race, sex, or astrological sign.

Physical impairment often becomes the salient feature dominating an individual's judgment of the disabled person. There are several reasons for this. First of all, the able-bodied individual sees disability from his own perspective. He immediately envisions what it would be like to suddenly suffer a physical loss. He does not consider that a disabled

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[1] Beatrice A. Wright. Physical disability--a psychological approach. New York: Harper & Row, Publishers, 1969, pp. 118-128.

person has gone through a process of learning how to function well despite the loss and of adjusting psychosocially to being without a physical or sensory capability that most other people do have. Furthermore, the nondisabled individual may not be aware of the procedures and mechanical and electronic aids that allow the person who is handicapped to perform the activities of daily life and career.

A second factor affecting the perception of a person totally in terms of disablement is that the environment does, in fact, impose restrictions that emphasize disability. The sight of a person being carried up a flight of stairs because there are no elevators or ramps to accommodate a wheelchair does not exactly reinforce perceiving that person as successfully executing the role of mother, husband, teacher or worker.

In her book Wright refers to the phenomenon of "expectation discrepancy"--when a person's expectations do not match the actual reality of a situation.[2] The discrepancy must be resolved and that resolution can take three directions. One involves distorting the reality so that the expectation remains intact, for example, adhering to stereotypes about the incapacities of disabled persons despite evidence to the contrary. Thus one will either ignore evidence that a disabled person is functioning well, or one will consider this evidence as the exception to the rule.

A second cognitive process by which people deal with evidence contrary to their negative stereotypes of disabled persons is to anormalize persons who are disabled, or as stated in the following example:

> ...to remove them from the laws of ordinary mortals by imbuing them with special powers to account for the fact that their performance surpasses one's expectations. Thus it is that the blind are felt to have a sixth sense to account for their mobility, their understanding, etc. Anormalization occurs when expectations about natural abilities resist change in the context of undeniable accomplishment.[3]

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[2] Ibid., pp. 70-78

[3] Beatrice A. Wright. "An analysis of attitudes--dynamics and effects." New outlook for the blind (March 1974),111.

The third, and obviously preferable, method of resolution is to change one's expectations so that they accord with reality. This direction is usually taken only when one is consistently and clearly confronted with evidence of that reality, for example when one has frequent contact with disabled persons and can witness their successful pursuit of an education or career.

In addition to the cognitive factors mentioned above, emotional or affective factors often engender devaluative attitudes toward physically handicapped persons. Pity (as opposed to sympathy) can stem from several sources. It may come from the able-bodied individual's insecurity and need to feel superior, or it may be a function of the exaggerated status values that society attributes to a certain physical ability.

Fear, too, can be at play. The presence of a disabled person can trigger, usually on a subconscious level, threatened feelings of one's own susceptibility to physical damage. The fear may be irrational, but it is nonetheless real. Fear may also be related to distorted perceptions of the amount of responsibility one will have to take in connection with a disabled person. An instructor in a community college, for example, may feel an exaggerated sense of the demands or burden that the disabled person will place upon his/her time and energy. However, some disabled students will require no additional academic assistance at all. While other students at the community college may require additional academic assistance, remedial work at the college's learning center or tutoring by a fellow student can relieve the anticipated "burden" felt by the instructor.

Perhaps the most common emotion that encroaches upon what could otherwise be positive relationships between handicapped and nonhandicapped persons is uneasiness. The person who has not known disabled persons may simply not know how to act--whether or not to offer assistance, whether or not to use the words "see" or "walk," whether or not to use exaggerated facial and lip movements when speaking to a deaf person. Such

anxiety can prompt an individual to avoid contact with the person who is disabled, even though it is just this contact which, when approached openly by both parties, can in time dissipate the anxiety.

Given the existence of devaluative attitudes in our society toward disability, people might assume that disabled persons will inevitably internalize these attitudes and translate them into feelings of personal inferiority and poor adjustment. This assumption, however, is without foundation. In a review of the research findings on disability, Wright indicates that there is no consistent relationship between negative self image/poor adjustment and the existence, type, duration, or degree of disability. She states:

> Our position must be further clarified on one point. It does not assert that physical disability plays no role at all in the development of inferiority feelings or other problems. It does imply, however, that the objective fact of disability is an extraordinarily poor criterion for judging which individual is unduly beset by self-abnegation and which individual is not, and that the common association between inferiority feelings and atypical physique is a gross oversimplification unwarranted by the facts.[4]

Clearly, not all disabled students have adjustment problems, nor do all community college personnel have negative attitudes towards disabled students. However, several Massachusetts community college personnel have commented that some faculty members have been resistant toward the disabled students in their classes. The following section discusses the roles that counseling personnel may assume to help ameliorate this resistance and other problems that may arise in connection with the student who is physically disabled.

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[4] Wright. Physical disability--a psychological approach, p. 55.

Responsibilities of the Counselor

Although the objectives in counseling disabled and nondisabled students are identical, the counselor of students who are handicapped may have to assume new responsibilities, to adapt procedures, and to acquire additional knowledge for serving these students most effectively.

Several principles are important in implementing any recommendation. First, the counseling staff should establish a basic policy regarding confidentiality of information and must obtain the student's permission anytime the counselor wishes to share information with other college personnel. Second, services should never be foisted upon the student; the student must be willing to participate in the counseling situation. He or she must be allowed to be co-manager of the counseling process.

Liaison with Instructors and Academic Advisement

At the beginning of the semester it is often helpful to provide instructors with information about the student, his/her capabilities, and special classroom needs. This information serves two purposes. First, it allows the instructor to prepare for individualized instruction for the student, such as adapting a testing procedure for someone with limited mobility of the upper extremities or writing new technical words on the blackboard for the benefit of hearing impaired students.

The second reason for communicating this information is that it may help to prevent or assuage discomfort the instructor might feel about having a disabled student in the class. This discomfort may be provoked by some of the factors discussed previously, for example, by fear based on a distorted perception of the burden involved in accommodating the student or by anxiety about how to deal with the student.

Given that the student grants permission to relay information to the instructor, it is imperative to involve the student in formulating the statement about his/her needs. It is acceptable, if not preferable, for

the student him/herself to relate this information to the instructor. When medical aspects of the disability determine classroom needs and performance capacities, the counselor may wish to discuss these issues with the student's physician, if the student so agrees. The following, taken from Herbert Rusalem's Guiding the Physically Handicapped College Student, is a sample report of facts bearing upon classroom performance of the student and considerations expected of the faculty:

> Miss J. has impaired vision. She wears corrective lenses, but even with this assistance, there are certain visual activities which are beyond her capacities. She can see the blackboard, illustrations, films, etc., in good light from a distance no greater than 3 feet. The fluorescent lights in your room will be helpful to her even on days when there is usually enough daylight so that you would not ordinarily turn on the lights. She is accustomed to sitting in the front row as close as possible to the place from which you teach. This enables her to see your face more clearly and to catch some of the subtleties of your expression. Her vision is good enough for her to take her own notes...She can also take essay examinations without special help through using a magnifying glass which she carries with her. However, reading materials for periods over a quarter of an hour tend to result in physical symptoms which lessen her efficiency. If you give quizzes or objective tests which require more than fifteen minutes of reading, she should be given two days' notice or more so that she can arrange to hire someone to read the material to her. Very soon after the beginning of the term, Miss J. will discuss the qualifications of several readers with you. You may accept or reject any of them. She will be permitted to take such tests in the Counseling Service under the supervision of one of the secretaries who has had some experience in making arrangements. Miss J. will have many of your assignments read to her. However, she has had considerable experience in doing this and expects to meet all the requirements of your course. You should expect her to complete all the work assigned to the class.[5]

A report such as this should sufficiently clarify the behavior expected both of the student and the instructor to help forestall student-faculty problems. Should problems arise anyway, the counselor can offer to confer with the instructor and student about difficulties encountered.

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[5] Herbert Rusalem. Guiding the physically handicapped college student. New York: Teacher's College, Columbia University, 1962, p. 117.

As is true with nondisabled students, complications between faculty and disabled students are more likely to arise from misunderstandings and affective factors than from a student's inability to perform the required work. Inadequate academic performance may be related to a number of factors. When the instructor pities the student or overestimates the effects of the disability, his/her low expectations of the student may result in the phenomenon of the "self-fulfilling prophecy." That is, these lowered expectations may actually have an unintended influence on the student's performance: "The teacher gets less because he/she expects less."[6]

Underestimation of the student's capacities could also prompt the instructor to bar the disabled student unjustifiably from learning activities such as participation in the laboratory. Without diminishing the importance of health and safety factors, the counselor could intercede on behalf of the student, pointing out to the instructor that the student is capable of the learning activity either independently, with a "buddy system" arrangement, or with use of adapted equipment (see chapter "Instructional Services").

An overpermissive attitude toward the student, perhaps born of pity, may prompt a faculty member to award sympathy grades, particularly when the student exhibits behavior geared to eliciting such a response. Making exceptions which are unnecessary may, in the long run, have debilitating effects on the individual's future education, career, and self-esteem. The student is told upon entering the community college that certain support services and modifications will be provided, but that academic performance is expected to be equivalent to that of the general student body. This point must also be made clear to the faculty.

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[6] Robert Rosenthal and Lenore Jacobsen. "Self-fulfilling prophecies in the classroom: teachers' expectations as unintended determinants of pupils' intellectual competence." In M. Deutsch, I. Katz, and A. R. Jensen (eds.), Social class, race, and psychological development. New York: Holt, Rinehart, and Winston, 1968, p. 220.

Another problem may be the "no special consideration" attitude. This may be evidenced by the instructor or by the student. In an effort to be egalitarian, to treat the student identically as other students are treated, the faculty member may avoid any special considerations for the disabled individual, even when warranted. In turn, if the student is unduly defensive about being "singled out" because of a disability, he/she may be reluctant to indicate what special needs do exist. As a result of either or both of these factors, accommodations which could greatly facilitate the student's performance might not be implemented. When such a situation exists, the counselor may wish to discuss the matter with both the student and the instructor in light of the following:

> ...special treatment in itself does not mean stigmatizing treatment. One does not debase a deaf person because one is careful to provide adequate light for lip reading. One does not debase an amputee because one gears the step to a more leisurely pace. Debasement does not depend upon how similar the treatment is to the usual pattern but rather upon underlying attitudes.[7]

Attitudes can be deeply rooted and resistent to change. Despite the efforts of the counselor, and of the student, it may happen that a faculty member will oppose having the disabled student in the class. If such is the case, the wisest course of action is to transfer the student to another class if at all possible.

In contrast to the extreme example of the individual who resists recognition of his/her disability is that of the person who may use the disability as an excuse to avoid the responsibility of working up to capacity. Wright has made the following observations about this:

> ...there are many times when a disability may be held *responsible* for one's failures. Sometimes this belief may actually be the case and sometimes it serves as a convenient rationalization. In any event, ascribing failure to the disability may act as an excellent protection against the greater personal indictment that the failure and frustration were the resultants of inadequacies of the ego, such as motivation and character, for which the person is more deeply responsible.[8]

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[7] Wright. Physical disability--a psychological approach, p. 239.

[8] Ibid., p. 94.

In this context, the counselor should consider the theory of what is called "secondary gains of disability":

> The person may...welcome the dependency facilitated by his disability;...it may afford him social sanction for avoiding competitive striving, which he fears. All these are motivational supports that will lead a person to cling to expectations confirming the disabling aspects of his disability.[9]

Academic advisors may be called upon to establish policy regarding the expected performance of the student. Standards of performance that are integrally related to the student's chosen career or academic goals cannot be diluted. Thus a severely paralyzed student pursuing an Associate of Sciences Degree in business administration should be expected to take the prerequisite English, math and accounting courses, but flexibility should be allowed in substituting another course for the laboratory requirement.

A useful rule-of-thumb is that the relevant substantive content of a student's education cannot be compromised, but that the time frame in which the knowledge is acquired and the method of acquiring and demonstrating the knowledge should be open to modification. When students require a great deal of time to pursue their course work, it is best to reduce the number of courses taken per semester, rather than reduce the number of papers or readings required in a particular course. Test content should be the same for disabled and nondisabled students, but different methods of test administration and test taking may be substituted.

Some college personnel have expressed difficulty in attempting to strike a balance between flexibility in accommodating the needs of the student and establishing "ground rules" relative to performance expected of the student. William M. Cruikshank's article "Obligations and

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[9] Ibid., p. 173.

Expectations of the Disabled Person in the Educational Process," found in the report The Academic Advisement of Disabled Students, edited by H. Cochrane et al, is an excellent statement on this issue.

Some students with limited manipulative abilities or with visual impairments may prefer to tape or verbally present research papers. While such an accommodation is time-saving for the student, it should be recognized that the spoken word is often stylistically different from the written word. Students preparing for careers which involve writing skills should prepare some of their papers in written form.

An additional academic advisement responsibility is that of counseling the student who plans to transfer to a four-year college. A number of local colleges now provide academic and counseling support services and architectural accessibility for disabled students. For information on these colleges and others throughout the country which accommodate physically disabled students, the counselor can consult the directory on higher education facilities and services for disabled students which will be published by Abt Associates in early 1976.

Career Guidance

A key concern of community college counseling staff is assisting the student in developing realistic vocational goals. The majority of career guidance personnel responded in the Massachusetts survey that career aspirations of physically disabled students were "somewhat realistic"; and several indicated that career goals were "very realistic." Three community college counselors did state, however, that the career aspirations of the disabled students were "not too realistic," remarking that this is a major problem being encountered.

That career aspirations were not found problematical at most community colleges was anticipated, for most students are sponsored by

Massachusetts Rehabilitation Commission and Massachusetts Commission for the Blind. Before these two agencies will subsidize individuals for postsecondary education, the client partakes in a vocational advisement process. The agency counselor may discuss career goals with the student's high school guidance department; the counselor and client investigate various career options, analyze results of aptitude and career interest tests, and formulate a course of study which is both viable for, and interesting to, the client. Therefore the client enters the community college with some idea of what career she/he would like to pursue, although this of course may change while the client is in college.

When a career guidance counselor does encounter what seems to be an inappropriate vocational goal, he/she should discuss this matter first with the student. Through such discussion, the student may inform the counselor of techniques and devices which can be used to perform those job tasks that the counselor has considered to be unmanageable; through this additional knowledge provided by the student, the counselor may come to realize that the goal is indeed viable. Or, in discussing the issue with the community college counselor, the student may conclude that the goal is not realistically attainable.

When the student does agree that the goal is not viable, or when there is an impasse between the community college counselor and the student, it is necessary to refer the student back to his/her counselor at Massachusetts Rehabilitation Commission or Massachusetts Commission for the Blind. If the agency's intervention does not resolve the issue, or if the student is not sponsored by a vocational rehabilitation agency, the community college counselor may have to assume the responsibility of working through the problem with the student.

An optimal method for assessing the appropriateness of a career is to have the student engage in job shadowing or work-study experiences where the student can actually witness persons engaged in, or perhaps him/herself try a hand at, jobs in the chosen field. The literature on

young disabled adults points out that inaccurate self-assessments and unrealistic vocational goals may be the function of an absence of reality-testing experiences. A combination of factors (lack of exposure to the world of work, the possible noncompetitive atmosphere of segregated education, or the misguided attempts of school personnel and parents to inflate the individual's ego and to motivate him/her) may cause the student to miscalculate the actual nature of a job and his/her ability to compete in that job. The reality-testing experience on the job may provide striking evidence to the student and counselor of whether the career choice is or is not viable.

A second approach is to perform an analysis of jobs in the student's chosen field. The counselor and student should explore the component tasks, skills, and affective factors involved in the jobs. Basic resources used for such exploration include: the Dictionary of Occupational Titles and supplements, which indicate the physical demands, working conditions, training time, worker traits, and physical strength requirements of occupations; and the Occupational Outlook Handbook. Additional information on careers may be obtained from professional associations and manufacturing and trade groups.

A useful procedure is to cover the tasks, skills, and affective factors, step by step. The counselor asks the student exactly how he/she will perform each task; discusses prerequisite skills, asking the student if he/she already has the skill, whether it is in any way limited by the disability; and sets up role playing situations to explore how the student would affectively cope with the demands of the job. A final step is to compare the student's performance in community college courses, secondary level grades, and results of standardized aptitude, achievement, performance and interest tests, with the prerequisites of the job.[10]

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[10] One must be cautious in interpreting the results of psychometric tests administered to disabled persons. Factors relative to testing are discussed in the final section of this chapter.

Little has been written regarding job analysis procedures vis-à-vis the disabled college student, but there are several resources available to assist counselors in carrying out job analysis and skills-matching procedures. One resource is available from Massachusetts Rehabilitation Commission. Lawrence Warnock, Director of Employment Resources at Massachusetts Rehabilitation Commission, is very interested in conducting a workshop for community college career advisement staff regarding use of the Dictionary of Occupational Titles, test results, and client interviews as tools for job analysis. Personnel interested in using this approach for the counseling of disabled students should contact Mr. Warnock to arrange for such a workshop.

Another source of information and materials is Project Career, which has conducted task analyses of 122 occupations, a number of which might be of interest to community college graduates, including radiologic technician, legal secretary, commercial artist, and food processing technician. These occupations are analyzed in terms of the probable attainability of required skills by persons with any one of 14 different handicaps, such as visual or hearing impairments, paraplegia, and hemiplegia. Eleven career guidance packs are available, each covering a different occupational cluster and providing task analyses of jobs within that cluster, as well as information on working conditions, job requirements, etc. Materials are available at no cost to community college personnel.

Project Career has also developed, "New Career Options," a model to develop job opportunities for handicapped individuals, and will conduct training workshops for persons interested in using the process. For further information about Project Career activities and materials contact John Post.

The job analysis procedure should be accompanied by an investigation of the aids, devices, and modified procedures that can be used to adapt jobs to the physical and sensory capacities of the individual (see chapters

"Job Placement" and "Instructional Services" for an introduction to adaptations and for listings of resource materials). It is also advantageous to identify certification and licensure requirements, for there may be health criteria involved in obtaining certification to practice a certain occupation. One can secure information on specific occupations which require certification/licensure in this state by contacting the Massachusetts Registration Board.

There are other contingencies the counselor must consider in advising students about careers. Restrictions in physical activities and working conditions may exist, as determined by the individual's physician. For example, persons whose epileptic seizures are not fully controlled may have to avoid work situations where the occurance of a seizure could result in a physical injury to the individual and possibly to his/her co-workers. Such situations include those which involve handling of flames, using toxic or caustic chemicals, or operating or working around machinery that does not have adequate safeguards; it is possible that work situations resulting in high stress or excessive fatigue may precipitate seizures in the person with epilepsy. Persons with diabetes may have to avoid work situations where there is a hazard of infection, for diabetes can result in a reduced resistance to infection or slowness of healing, and in severe cases, to diabetes gangrene.

A useful series of pamphlets discussing the above types of factors involved in the evaluation of work capacity, Interviewing Guides for Specific Disabilities, is available from the U. S. Employment Service. These guides also provide a lay description of the disease or disability and definitions of terms that might be found in an individual's medical reports.

Additional materials to which the counselor and student may refer for information on counseling and careers relative to persons who are disabled[11] are:

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[11] Materials regarding counseling for deaf students are identified in a later section of this chapter.

Placing the Blind and Visually Handicapped in Professional Occupations. Mary K. Bauman and Norman Yoder.

> Based on interviews with approximately 500 visually impaired persons working in 14 different career areas, this book discusses: the job duties involved; disability-related problems encountered in performing the duties; techniques and devices used to resolve these problems; and psychological portraits of persons who have been successful in these careers. This text is valuable to use with students entering paraprofessional and technical careers after two years of study, as well as with students who will transfer to four-year colleges.

Selected References on the Vocational Counseling, Placement, and Employment of Handicapped Workers. National Easter Seal Society for Crippled Children and Adults.

> Annotated listings of books, pamphlets and reprints are provided with ordering information.

A critical issue regarding "unrealistic" vocational goals merits consideration. That is, should employability be the major factor dictating whether a student should pursue a certain course of study at the community college? Assuming that the severely disabled student can successfully complete a certain career program, and is realistically aware that securing employment will be difficult, is it not the prerogative of that student to pursue the career program? The right of self-determination cannot be overlooked.

Further, one must question the accuracy of forecasting the employability of a person who is disabled. It should be recognized that "employability is not related in a simple way to degree of disability, that many unforeseen social as well as personal forces may combine to open up opportunities for even the most severely disabled."[12]

Obviously, the process of job analysis and skills-aptitude-interest matching is not as fool-proof as we would sometimes wish it to be. As has been discussed by Donald Super and others concerned with vocational choice, career aspirations are an extention of a person's self concept.

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[12] Wright. Physical disability--a psychological approach, p. 348.

One cannot expect to compare objective occupational information with evidence of a student's capacities and always have the student reach a logical conclusion about the appropriateness or inappropriateness of a career. The student's emotional needs--to see him/herself in a certain light, to perhaps deny that the disability may realistically prevent the satisfaction of certain life goals, or to underestimate his/her abilities --can complicate the intended outcome of career counseling. And it is at this point that personal adjustment counseling becomes a necessary adjunct to the career guidance process.

Personal Adjustment Counseling

Respondents to the community college survey requested sources of particular information concerning the psychosocial factors possibly associated with having a disability. Again, it is suggested that counselors consult Beatrice Wright's Physical Disability--A Psychological Approach. Other useful texts are:

"Psychological Consequences f Blindness." In Coping With the Unseen Environment Herbert Rusalem.

This chapter identifies possible emotional responses and coping mechanisms associated with blindness, stressing the individuality of the person's reaction to the disability. Includes an extensive bibliography.

"Counseling Programs for the Physically Handicapped College Student." In Guiding the Physically Handicapped College Student. Herbert Rusalem.

Among the topics discussed are consultation with parents, the use of medical information, and problems encountered in adapting to the college environment.

"The Psychosocial Aspects of Epilepsy." George J. Goldin and Reuben J. Margolin. In Epilepsy Rehabilitation. George N. Wright (ed.).

The authors have discussed epilepsy "in terms of its maximum potential for producing psychosocial problems." Factors specific to seizure occurence, problems in need satisfaction, cultural values, and familial reactions are examined.

Rehabilitation Practices with the Physically Disabled. James F. Garrett and Edna S. Levine (eds.).

> The entries for various disabilities examine medical factors, the individual's response to the disability, and adjustment factors relative to the individual's familial, community, and vocational milieu. Among the disabilities discussed are amputation, arthritis and rheumatism, cardiovascular conditions, hemiplegia, cerebral palsy, and sensory handicaps. Numerous references are provided.

"Sex and Self: The Spinal Cord Injured." Silas P. Singh and Tom Magner. Rehabilitation Literature 36 (January 1975), 2-10.

> The relationship between an individual's self-concept and attitudes toward sexuality is discussed; medical factors pertinent to sexuality are briefly noted. The bibliography cites more than 100 references.

Resource materials about adjustment difficulties relative to deafness are identified in the next section.

Counseling the Student with a Hearing Impairment

Communication difficulties and other factors often associated with hearing loss may uniquely affect the counseling process. Because there are relatively few young to middle-aged persons with hearing impairments, counselors may have had limited experience in counseling students with this type of disability. This section first discusses methods of communicating with hard of hearing and deaf students; it then provides a brief orientation to the adjustment problems which may confront the prelingually deaf person, and addresses issues related to the career guidance of deaf students. Although there is comparatively little written about hard of hearing persons, there is a rich body of literature concerning deafness, and counselors are urged to consult the materials identified in the following sections for further information.

Communication with the Hearing Impaired Student

While hard of hearing and postlingually deaf persons, and to a lesser extent prelingually deaf persons, may have adequate or good articulation, some persons may have speech which is difficult to understand. McGowan and Viscovi suggest that in order to understand the individual's speech better the counselor can watch the client's lip movements, for although vocalization may be poor, the lip movements may approximate the consonants, vowels and words that are spoken.[13] Levine presents the following suggestion for understanding the speech of the client:

> When difficulties are encountered, a helpful procedure is to permit the deaf subject to talk uninterruptedly for a while to give the interviewer's ear a chance to become attuned to the particular tones and rhythm of the subject's speech. If the interviewer experiences embarrassment listening to uncomprehended speech, or if the subject has little to say, it is often helpful to request him to read aloud on one pretext or another. Having a known verbal context to which to refer helps the listener synchronize the sounds he hears with the words they stand for. During this auditory adjustment period, the interviewer should not strain for precise comprehension but should rather open his ears to the general speech pattern until it finally sets into recognized verbal forms.[14]

The construction of sign language is not parallel to that of the English language. When the student's primary mode of communication is sign, his/her written and oral communication may reflect the grammar and syntax of sign language rather than the grammar and syntax of English. Thus the statement "I went to the movies yesterday" may be expressed "Movie yesterday go." While the majority of deaf students schooled in Massachusetts and now attending community colleges probably will have expressive modes consonant with the English language structure, the counselor should be prepared to understand verbalizations that have irregular syntax. Most important, the counselor must remember that irregular expression is not the result of inferior intellect.

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[13] John F. McGowan and Gino Viscovi. "Counselor selection, education, and training." In Allen E. Sussman and Larry G. Stewart (eds.), Counseling with deaf people. New York: Deafness Research & Training Center, New York University School of Education, 1971, p. 143.

[14] Edna S. Levine. The psychology of deafness. New York: Columbia University Press, 1960, p. 164.

Speechreading, which may be used by hard of hearing and deaf people, is an imperfect tool at best. The counselor can facilitate the process for the student by avoiding a natural tendency to exaggerate mouth and facial movements when speaking. Sitting with one's back to a light, window, or mirror can make speechreading difficult for the student. If the student has difficulty in understanding a certain word or phrase the counselor can switch to another word or phrase rather than continuing to repeat the one causing difficulty. If a student is nodding his/her head the counselor cannot assume that the message is understood; it is helpful to ask in a friendly manner if the student understands what is being said.

When communication difficulties arise between counselor and student, it may be necessary to use written notes. The writing of simple messages can be an effective way to impart information but is basically stultifying in personal adjustment counseling situations.

If the student communicates primarily through manual language, as some profoundly deaf students will, the counselor should be proficient in that mode of communication. Persons interested in learning manual communication may contact the Rehabilitation Services for the Deaf Office of Massachusetts Rehabilitation Commission for information on institutions offering courses. Educational institutions which regularly conduct classes are:

Cambridge Center for Adult Education

University of Massachusetts at Amherst,
Division of Continuing Education

Learning Center for Deaf Children, Framingham

Northern Essex Community College,
School of Continuing Education.

Personnel who cannot communicate well manually will find it necessary to use interpreting services when counseling the manual student. The Arkansas Rehabilitation Research & Training Center presents the following guidelines concerning the use of an interpreter in the counseling situation:

- It is suggested that the interpreter repeat verbatim what the deaf student is saying or signing. This helps the counselor to determine the student's language level and avoids the interpreter's coloring of the student's statements.
- The counselor and interpreter must avoid private conversations in the presence of the student, who may resent being excluded from such interactions.
- It is necessary for the interpreter to sign everything the counselor says to the student.
- The interpreter and counselor should sit side by side so that the student can see both of them.
- When the student is speaking or signing, the counselor should look at the student, not at the interpreter. Facial expressions and body language may reveal important aspects of the student's attitudes and emotions.
- The counselor should look at the student when talking to him/her, not at the interpreter.
- The counselor must stress the need for confidentiality with the interpreter.
- The use of family members as interpreters is to be avoided. The family member may have a tendency to talk about, rather than interpret for, the student.[15]

There are several problems in using an interpreter. Obviously there is a loss of direct communication, which can affect the development of rapport between counselor and student. Confounding this is that the presence of a third person may have an inhibiting effect on the student. Feeling and content can be lost in the interpreting process, even with a skilled interpreter. Finally, there is a shortage of qualified interpreters in Massachusetts. The counselor may be able to locate interpreters by contacting Kay Moore at the Office of Rehabilitation Services for the Deaf at Massachusetts Rehabilitation Commission. For information about interpreters in states bordering Massachusetts, contact the national

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[15] Arkansas Rehabilitation Research & Training Center. The rehabilitation of the deaf: a training guide. Eleventh Institute on Rehabilitation Services, New Orleans, Louisiana, 1973, pp. 18-19.

office of the Registry of Interpreters for the Deaf. For additional information regarding communication with deaf persons, counselors should refer to Edna S. Levine's The Psychology of Deafness (pages 162-171).

Life Experiences and Possible Adjustment Problems of Prelingually Deaf Students

The complexities involved in counseling the prelingually deaf student --one who was born deaf or who became deaf before acquiring language--may go beyond the issue of the counselor and student arriving upon an adequate mode of communication. To serve this student effectively, the counselor must gain an understanding of the effects that early sensory deprivation can have upon learning and adjustment.

Much of the knowledge acquired in one's life is learned not in the formal school setting, but informally through daily communication with parents, family, friends, and through the media. The profoundly deaf infant and young child is deprived of the benefit of these very basic sources of information about the immediate and extended environment. Lacking hearing, the tool for monitoring his own speech and the speech of others, the young child cannot spontaneously acquire the language used in the hearing world around him/her. Reading skills may provide a visual tool for gaining information about the environment, but the development of reading skills is delayed because of the difficulties involved in acquiring the basis of reading--language.

The child born into a family which uses manual communication is fortunate in a certain respect, for he/she is provided with a method of sharing with parents and siblings the information and feelings that are generally expressed verbally among the hearing. But many children are reared in families that do not have manual communication skills; furthermore, parents may resist learning this alternative language themselves and prohibit their child from doing so, in an attempt to deny the impact of the disability and to "normalize" the child. When the child

starts his/her education, the school may focus on the development of verbal communication; learning speech and speechreading is arduous and slow, and is for some deaf persons an insurmountable task. Teaching the more easily-learned manual vehicle for communication may be underemphasized in the early years of the child's formal education. Hence the young deaf child may be deprived of the tools for making known his/her needs, for understanding, cognitively and emotionally, what is happening in the immediate environment, and for informally acquiring knowledge of the world beyond his/her home and school. The effect may be one of total isolation.

A further factor affecting the child is the way the family copes with the stress of having a severely disabled child. Anger, denial, ambivalence, over-protection, over-identification, and over-permissiveness are among the responses that parents may have to their deaf child. If such emotional elements are heaped upon the isolation of the young child, adjustment problems may well develop.

Personal counseling with some profoundly deaf students may prove to be a difficult, and possibly nonproductive, effort, unless the counselor is highly proficient in manual communication and has specialized knowledge of the effects profound deafness can have on life experiences and personality development. Beyond requiring these types of expertise, effective personal counseling may be dependent on awareness of the very subtle ways that altered language development and the manual language itself can affect the ways an individual understands concepts that are mediated by language. Ranier and Altshuler suggest that perhaps words and "other experiences which are organized around words...lead to different associations in the deaf and in the hearing, and therefore will have a different cognitive-emotional meaning."[16] Figurative meanings can be misunderstood, such as those of the following statements used in counseling: "We want you to look at yourself" or "What is behind your behavior?"[17]

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[16] John D. Ranier and Kenneth Altshuler (eds.). Psychiatry and the deaf. New York: New York State Psychiatric Institute, 1966, p. 76.

[17] Arkansas Rehabilitation Research & Training Center. The rehabilitation of the deaf, p. 42.

If intensive counseling is necessary, it is best to refer the student to a counselor or therapist experienced in serving persons who communicate manually. Since there is a dearth of professionals with the proper skills to serve profoundly deaf persons, it may be advisable to refer the student to the Rehabilitation Services for the Deaf Office at Massachusetts Rehabilitation Commission. Such a referral can be made even if the student is not already a Massachusetts Rehabilitation Commission client.

To understand the impact that deafness can have on the early development of the deaf individual and the consequences on the adolescent's and adult's social, psychological, educational and vocational adjustment, it is strongly recommended that counselors read They Grow in Silence: The Deaf Child and His Family by Eugene D. Mindel and McCay Vernon. This book presents a most cogent and sensitive statement on the life experiences of profoundly deaf persons. Counseling with Deaf People by Allen E. Sussman and Larry G. Stewart is another excellent book for counselors: it discusses communication-related problems, education, and employment and merges basic principles in the field of counseling with issues unique to counseling deaf persons. Excerpts from actual counseling sessions are presented.

Career Guidance with the Deaf Student

Of concern to the career guidance personnel is the effect that experiential deprivation and communication difficulties may have upon the deaf student's formulation of career goals. Numerous references in the literature on deafness indicate that the student may enter college with either unrealistic and/or limited knowledge about occupations. E. Ross Stuckless of National Technical Institute for the Deaf has indicated:

> Research on career development of deaf students draws attention to the fact that most deaf students evidence considerably less maturity than hearing students as they enter postsecondary education, about certain fundamental dimensions of career development, most particularly in the realms of occupational information, and the skills and knowledge necessary for career decision-making.[18]

[18] E. Ross Stuckless. "NTID research relative to the young deaf adult." In Brian Bolton and Leon Thornton (eds.), Research conference on the deaf young adult. Arkansas Rehabilitation Research & Training Center, 1972, pp. 14-15.

As further stated in Research Conference on the Deaf Young Adult:

> So many of our [deaf] students are at the early level of occupational maturation that allows them to think and act like early school children; that is, they seem to believe that they can become whatever they want to become, as if the wish is almost effortlessly father to the deed.[19]

A number of deaf students will come to the community college with a valid career goal in mind, perhaps as a result of career exploration experiences offered by the secondary school or by Massachusetts Rehabilitation Commission. But because some public day schools and classes are not equipped to provide extensive counseling services,[20] it may be anticipated that some deaf students will have difficulty in making suitable career choices. Thus career guidance personnel at the community college may be called upon to assist the student in exploring career options.

The discussions with the student and the materials to which the counselor refers the student should be geared to providing knowledge of the following factors as related to various careers:

Nature of tasks
Products of work
Social contribution
Work conditions
Entry requirements
Salary
Career mobility
Job outlook/security
Implications for lifestyle.

Among the career exploration materials appropriate for students to use are:

Arco-Rosen Career Guidance Series. Arco Publishing Company

Occupational Briefs. Chronicle Guidance Publications

Occupational Exploration Kit. Science Research Associates

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[19] Sidney Hurwitz, "Comments on: NTID research relating to the young adult." In Bolton and Thornton, Research conference on the deaf young adult, p. 39.

[20] McCay Vernon. "Current status of counseling with deaf people." In Allen E. Sussman and Larry G. Stewart (eds.), Counseling with deaf people. New York: Deafness Research and Training Center, New York University School of Education, 1971, pp. 31-32.

Some career materials have been specifically designed for hearing impaired students. The Media Program at St. Paul Area Technical Vocational Institute has developed career counseling packages entitled Vocational Exploration Packages (VEP's) as well as packages for training, Readiness Curriculum Packages (RCP's). The careers addressed in these packages to date are Machine Tool Processes and General Office Practices. Films use "Four-way Simultaneous Communication," that is, sound, captioning, lipreading opportunities and manual communication. Contact Robert Lauritsen, Project Coordinator at Saint Paul Area Technical Vocational Institute for information on the availability of these products.

Additional career education materials for hearing impaired students are being developed by the Center for Vocational Education at Ohio State University and the Model Secondary School for the Deaf at Gallaudet College. Although the materials are aimed primarily for secondary school students, the career education concepts underlying the materials are appropriate for community college students. Types of materials available include a staff development package, which is an orientation to career education for teachers and counselors of the deaf; 13 career education curriculum units which have been adapted to the reading level of the students at the Model Secondary School; guidelines for development of career education curriculum; and a career planning system. These materials and further information are available from Brian Fitch at the Center for Vocational Education.

An additional aspect of career counseling is isolating the job tasks that conventionally involve hearing, determining how central those tasks are to a certain career, and discussing ways to undertake hearing-related tasks. The study Deaf Persons in Professional Employment by Alan Crammatte reports on the ways a sample of deaf persons (30% of whom were born deaf) in professional, technical, and kindred occupations deal with communication-related problems on the job. When asked about their primary mode of expressively communicating with

hearing persons at work, almost two-thirds responded that they used oral communication most frequently and about one-third used written means most frequently. Regarding the method used most frequently to receive information from others, 55% responded that the primary method was speechreading and 40% indicated written notes.[21]

A discussion of on-the-job problems in the Crammatte study reveals that the majority of deaf persons whose jobs involved use of the telephone remained at the telephone while a third party assisted in receiving and transmitting the messages; some persons left the task entirely up to a co-worker. A problem less easily managed was found to be the large group meeting or conference. Deaf persons found speechreading and notewriting of limited help. Some persons asked for a written agenda or briefing before the meeting and a briefing after the meeting.[22]

In advising the hearing impaired student who wishes to transfer to four-year colleges, the counselor can consult the aforementioned Abt Associates' directory, and A Guide to College/Career Programs for Deaf Students, produced by the National Technical Institute for the Deaf and Gallaudet College. The latter lists those programs which, as of 1973, had at least one staff member working exclusively with deaf students. The entry for each college indicates whether the following types of specialized services are offered: interpreting, tutoring, personal and social counseling, speech and hearing clinical services, manual communication training for students and/or instructors, and supervised housing. The Guide is currently under revision and is expected to be completed by November 1975.

Additional resources on career and academic guidance are:

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[21] Alan B. Crammatte. Deaf persons in professional employment. Springfield, Illinois: Charles B. Thomas, Publisher, 1968, pp. 10-11.

[22] Ibid., pp. 92-96.

Improved Vocational, Technical, and Academic Opportunities for Deaf Persons. Robert R. Lauritsen.

Outlines the vocational exploration program and other instructional courses provided during the preparation semester for deaf students at St. Paul Technical Vocational Institute and describes counseling services provided. See pages 13-28.

Improved Vocational, Technical, and Academic Opportunities for Deaf People: Research Component. Final Report. William N. Craig and Nona L. Burrows.

Describes the preparatory semester at Delgado College Program for the Deaf during which the staff evaluates the student's vocational and academic aptitude, interests and objectives. Course in occupational information and remedial math and English are provided. See pages 32-38. Pages 11-12 and Appendix A identify the tests used by the counseling staff.

Rehabilitation of the Deaf: A Training Guide. Arkansas Rehabilitation Research & Training Center, University of Arkansas and the Hot Springs Rehabilitation Center.

Units IV, VI, VII, and VIII identify, in outline form, factors bearing on vocational evaluation, work adjustment services, vocational exploration, preparation for job-seeking, and employment. A comprehensive listing of films and references accompanies each unit.

The psychometric testing of deaf students is addressed in the following section on testing students with various physical disabilities.

Psychometric Testing

If, in the opinion of a community college counselor, a student should be tested in one or more areas, the counselor would be well advised to contact the student's State agency counselor (with the student's permission of course). In certain cases it may be appropriate for the community college to select and administer the test, but in other situations it may be preferable for Massachusetts Rehabilitation Commission or Massachusetts Commission for the Blind to arrange for test administration.

Massachusetts Commission for the Blind itself does not administer the tests but contracts with psychologists who are experienced in testing blind individuals. If testing is needed for a blind student who is not sponsored by Massachusetts Commission for the Blind, a community college counselor can obtain the names of qualified psychologists in a given geographical area by contacting the Massachusetts Commission for the Blind counselor for that area. The names of the agency counselor can be acquired by calling the general information number at Massachusetts Commission for the Blind.

Massachusetts Rehabilitation Commission also has a general policy of referring its clients to psychologists for testing. However, since it is difficult to locate psychologists who can communicate effectively with deaf persons, counselors at the Rehabilitation Services for the Deaf (R.S.D.) Office of Massachusetts Rehabilitation Commission may administer tests. Massachusetts Rehabilitation Commission maintains a roster of psychologists familiar with the testing of persons with various handicaps. In the event that a student is not sponsored by this agency, the community college counselor can obtain referral information about local skilled psychologists by contacting the area supervisors of the appropriate local office of Massachusetts Rehabilitation Commission.

Even if most tests are administered through Massachusetts Rehabilitation Commission or Massachusetts Commission for the Blind, the community college counselor will probably have occasion to see scores of these and other previously administered tests, and should therefore be aware of the many factors involved in valid testing of handicapped individuals.

The choice of a proper test, the use of appropriate administration procedures, and the interpretation of test results from an informed perspective are all critical in the psychometric testing of persons who are physically disabled. The literature on deafness and blindness has

stressed these factors greatly, but the literature on testing persons with other disabilities is sparse.

In choosing a proper test, or analyzing the suitability of a test previously administered, the test content should be evaluated. The "verbal" level of a test is a particularly important factor in testing profoundly deaf students. Tests necessitating verbal facility can be used in only two conditions: when the hearing impaired individual does not have a language disability imposed by the hearing loss; or when the purpose of the test is to assess achievement in language and reading. Using highly "verbal" tests under any other circumstances will reflect the student's language deficiencies rather than the factors one intends to assess.[23] Thus, projective personality tests such as the Thematic Aperception Test and Rorschach are useful only when the deaf client is highly verbal.[24,25,26]

Results of achievement tests administered to deaf students may appear comparatively low but should not be automatically construed as indicative of low intelligence or inability to pursue a community college education. A number of students who successfully pursue their

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[23] Davis and Silverman assert that examiners must be cautious in selecting appropriate tests for the congenitally hard of hearing person, who, "from a psychodiagnostic point of view [may be] much more like a congenitally deaf client than his speech and his apparent responses to sound would suggest." Hallowell David and S. Richard Silverman. Hearing and deafness (Third Edition). New York: Holt, Rinehart and Winston, 1970, p. 469.

[24] Richard E. Hardy and John G. Cull. Educational and psychosocial aspects of deafness. Springfield, Illinois: Charles C. Thomas, Publisher, 1974, p. 170.

[25] McCay Vernon and Donald W. Brown, "A guide to psychological tests and testing procedures in the evaluation of deaf and hard of hearing children." Journal of speech and hearing disorders 29 (November 1964), 419.

[26] Helmer H. Myklebust. The psychology of deafness: Sensory deprivation, learning and adjustment. New York: Grune and Stratton, 1960, p. 124.

education at National Technical Institute for the Deaf enter the college with about a 7th to 8th grade level in language skills and 8th to 9th grade level in math, as measured in their senior year of high school by the advanced battery of the Stanford Achievement Test (Harcourt Brace and Jovanovich). According to Joseph Dengler, Associate Director of Admissions at NTID, it has been shown that deaf students scoring lower in language -- at the 4th to 6th grade level -- are able to successfully pursue vocationally oriented courses at the postsecondary level.[27]

In intelligence testing, the verbal scales of tests such as the WAIS are considered appropriate for disabled persons with unimpaired language development, but performance scales may have limited merit for individuals who are blind or who have manual limitations. Conversely, it is widely accepted that the nonverbal or performance scales of intelligence tests provide a more accurate assessment of the deaf individual's intelligence than do verbal scales. Vernon has stated that a deaf individual may score at the "genius" level on a scale of performance while, because of language problems, scoring at the "retarded" level on the verbal scale of the same test.[28]

In choosing a test for the severely hearing impaired student one must examine not only the verbal level of the test, but also the concepts involved. Conceptual limitations may be concomitant with deafness. As stated in Counseling with Deaf People:

> Individuals who have been deaf since birth or early childhood often have limited ability in dealing with concepts that have no immediate and specific referents. This problem may result from language limitations, isolation, and lack of adequate stimulation during the developmental years.[29]

Regarding conceptual limitations, Levine gives the example of the deaf individual who may understand the world "mental" and the word "hospital," but to him the concept "mental hospital" may be unfamiliar or distorted:

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[27] Joseph Dengler. Personal Communication, June 5, 1975.

[28] McCay Vernon. "A guide for the psychological evaluation of deaf and severely hard of hearing adults." Reprint from Deaf American 19 (May 1967).

[29] Sussman and Stewart. Counseling with deaf people, pp. 60-61.

he may have never been taught the meaning of the two words when put together, or the concept may have no concrete referent for him within his experience.[30]

Experiential deprivation may make the results of vocational interest inventories somewhat misleading. As asserted by Hardy and Cull:

> Interests develop in response to environmental stimulation and opportunities. Unlike abilities, the concept of interest requires an object of attention; interests do not exist apart from experience, which may be either vicarious or real. Because deaf persons are often not exposed to a wide range of educational and cultural experiences, their interests may be accurately described as underdeveloped.[31]

Interest inventories may be predicated on a knowledge of activities outside the purview not only of deaf students, but also of students with other physical disabilities, who may have had limited exposure to life experiences. The counselor must keep this factor in mind when interpreting career inventory results.

Paper-and-pencil personality tests may be of limited relevance to disabled persons. Often items on personality inventories are based on standards of "normal" physical functioning. Myklebust presents the following samples of Minnesota Multiphasic Personality Inventory items which are "loaded" for persons with hearing impairments:

> I would like to be a singer.
> My speech is the same as always.
> My hearing is apparently as good as most people's.[32]

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[30] Levine. The psychology of deafness, p. 182.

[31] Hardy and Cull. Educational and psychosocial aspects of deafness, p. 173.

[32] Myklebust. The psychology of deafness, p. 139.

Similarly, personality test items may not be "physiologically" appropriate to persons with other impairments. With reference to the use of personality tests with blind persons Rusalem has reported:

> On the whole...existing paper-and-pencil personality instruments have proven only modestly successful in the context of vocational rehabilitation. The numerical scores derived from these instruments can be questioned not only in terms of measurement theory but also in terms of the significance of the adjustments made in test administration practices to adapt the measures to blind subjects, the applicability of sighted norms, and the meaning of individual items to persons with long-standing blindness.[33]

A review of the literature on test administration indicates that there are no set guidelines available for adjusting time limits on tests which have been developed for, and standardized on, nondisabled populations. Apparently, adjustments are generally left to the discretion of the examiner and depend upon the purpose for which the test is being administered and the individual needs of the person being tested. It should be noted that the actual mechanics of reading a test item to a client, and of the client's indicating the response to an amanuensis, who will then record the response, necessitates more time than is necessary for persons who can read and respond to test items without assistance.

Regarding the timing of tests for visually impaired persons, a representative of the Massachusetts Commission for the Blind has suggested that untimed tests be used.[34] Carl J. Davis, Chairman of the Department of Psychology and Guidance at Perkins School for the Blind, has provided the following information regarding testing time limits at Perkins:

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[33] Herbert Rusalem. Coping with the unseen environment: an introduction to the vocational rehabilitation of blind persons. New York: Teachers College Press, Columbia University, 1972, p. 142.

[34] Stephen Duclos. Personal Communication, July 3, 1975.

> Most visually handicapped subjects are able to complete the performance items [of the WAIS] within the normal time limits. However, we do take the liberty of extending the time span for Digit Symbol from two to three minutes which is consistent with the increase in time limits made for achievement testing with large type materials. On the other hand, one should not feel constricted by time limits. If one is conducting a diagnostic, one's intent should be to determine how much the subject is capable of performing and on that basis time limits do become secondary and I believe warrantedly so. I also feel well supported in this in that such a well-known person as Ann Anastasi has stated publicly that any psychologist who feels constricted by time limits in testing is doing a disservice to his clients.[35]

Another factor related to appropriate administration of tests to visually impaired students may be the availability of the test in braille, large type, or taped version. To determine whether a specific test is available in any of these media, a person can contact the American Printing House for the Blind or consult its catalogs, which list all tests available from that organization. Information about tests available elsewhere can be obtained from the Central Catalog (also produced by the APHB). The Instructional Materials Reference Center at the APHB responds to inquiries about tests listed in the Central Catalog. This publication is also available at several locations in Massachusetts.

Testing with deaf students should be performed on an individual, not group, basis,[36] and it is imperative that the examiner communicate effectively in the student's preferred mode of communication, to ensure that test instructions are understood. Use of an interpreter is not considered an effective substitute for the examiner's fluency in manual communication; when an interpreter is used, test results may be of dubious quality.[37]

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[35] Carl J. Davis. "The psycho-educational diagnostic materials currently in use at the Perkins School for the Blind." Mimeograph. Watertown, Massachusetts: Perkins School for the Blind, 1974.

[36] Levine. The psychology of deafness, p. 212.

[37] Vernon and Brown. "A guide to psychological tests," p. 420.

As is the case with psychometric testing for all students, test interpretation should be performed cautiously. When interpreting the test results of disabled students, an extra measure of sensitivity is needed. One must consider not only the appropriateness of the instrument and the modifications or lack of such used in administering the test, but also the degree to which normative standards based on nondisabled populations are appropriate for disabled persons.

The decision of whether to use norms which have been standardized on a disabled or nondisabled population is dependent on what aspects of the disabled person's abilities or potential are being assessed. In the opinion of E. Ross Stuckless of the National Technical Institute for the Deaf, for example, it is often preferable to use norms for a nondisabled population when testing a deaf student to determine how well he/she functions relative to his/her hearing peer group. On the other hand, if a community college questions a low score of a deaf student or for some other reason wishes to see how the student is functioning in comparison with the deaf population, it might be valuable to use specialized norms, particularly on verbal tests.[38]

In interpreting test results the counselor should ultimately consider the following:

> In the psychological appraisal of physically disabled persons, the expression "test interpretation" is often taken too literally. It is again emphasized that the purpose of psychological testing is to interpret not a test but rather individual behavior and reactions. The test and its scope of possible findings have already been interpreted, as it were, by the test constructor in terms of standardization, rationale, and scoring. But individual responses are clinically meaningful only in the light of a subject's background of experiences. If the background is in conformity with that of the standardization population of a given test, interpretation is facilitated. But if it is not, the examiner must acquire the necessary familiarity with the life context from which such "unstandardized" responses are derived if he is to employ valid procedures of assessment.[39]

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[38] E. Ross Stuckless. Personal Communication, August 14, 1975.

[39] Levine. The psychology of deafness, pp. 210-211.

Results of the community college survey indicate that the tests most frequently administered to physically disabled students at Massachusetts community colleges are the Wechsler Adult Intelligence Scale (Psychological Corporation), Kuder Preference Record (Science Research Associates, Inc.), the Strong Vocational Interest Inventory (Stanford University Press), and the Comparative Guidance and Placement Program (Educational Testing Service). To determine the appropriateness of these four tests for the disabled student, the project staff has reviewed the literature on testing and contacted state agencies and exemplary postsecondary programs. As indicated previously, testing for hearing and visually impaired persons has received more attention in the past few decades than has testing for persons with orthopedic handicaps. This emphasis is reflected in the reporting of test use which follows.

The literature review and contact with field experts reveal that those tests most frequently used with disabled students at Massachusetts community colleges are appropriate on the whole, although several tests are of limited value with deaf students.

Either or both of the WAIS scales may be used, depending on the student's disability. There is almost unanimous agreement in the literature that the Performance Scale of the WAIS is one of the more appropriate tests for persons with hearing impairments, but that the Verbal Scale is not generally used. Rusalem reports that the Verbal Scale is one of the most frequently used instruments for assessing the intelligence of blind adults.[40] Also, Perkins School for the Blind reports that the Performance Scale of the WAIS is successfully used for students whose vision is as poor as 5/200. Only one subtest, Picture Arrangement, is omitted.[41] Regarding the testing of persons with

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[40] Rusalem. Coping with the unseen environment, p. 139.

[41] Davis. "The psycho-educational diagnostic materials currently in use at the Perkins School for the Blind."

epilepsy, Rennick reports that comprehensive assessment batteries often include a Wechsler.[42]

The counselor should note Rusalem's warning that certain performance tests, "...such as the Blocks Subtest of the Wechsler Adult Intelligence Scale, measure the impaired perception of some cerebral palsied students rather than the intelligent manipulation of materials, pictures, and ideas."[43]

The Kuder Preference Record and the Strong Vocational Interest Inventory are considered suitable for use with visually impaired persons.

The Massachusetts Commission for the Blind has recently undertaken a survey of organizations serving the blind in other states; most of the respondents indicated that the Kuder and the Strong, as well as the Occupational Interest Inventory (California Test Bureau) are used with some success with visually impaired persons.[44] The Kuder is regularly used with college-bound students at Perkins School for the Blind.

The Kuder and the Strong are not considered appropriate for many severely hearing impaired students. David and Silverman assert that interest tests are almost always highly verbal and not very effective with deaf persons who have language problems;[45] Hardy and Cull specifically identify the Kuder and Strong as presupposing a knowledge of activities which deaf persons may not have.[46] Myklebust et al present

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[42] Phillip M. Rennick. "Psychosocial evaluation of individuals with epilepsy." In George N. Wright (ed.), Epilepsy rehabilitation. Boston: Little, Brown and Co., 1975, pp. 92-93.

[43] Rusalem. Guiding the physically handicapped college student, p. 111.

[44] Stephen Duclos. Personal Communication, July 3, 1975.

[45] Davis and Silverman. Hearing and deafness, p. 473.

[46] Hardy and Cull. Educational and psychosocial aspects of deafness, p. 173.

the following discussion:

> With those having the required level of reading ability we have used the Kuder Preference Record; a scoring procedure is provided in the manual for determining whether the individual is able to read adequately. Studies using the Kuder with deaf adults suggests that deafness has a significant influence on the development of interests. Areas of endeavor requiring direct communicative relationships with others tend to be rejected, as do those involving music or other activities which are predominantly dependent on audition. Activities which are predominantly visual and which are not directly dependent on close interaction with others are favored.[47]

Since the Comparative Guidance and Placement Program is a relatively new instrument, there is little published information regarding its use with disabled students. Northern Essex Community College has reported it useful in the placement and guidance of physically disabled students, and the National Technical Institute for the Deaf has found it similarly useful with hearing impaired students.

The Scholastic Aptitude Test (SAT) is a widely used test for admissions screening. A number of community colleges require the SAT for admissions, and some community college personnel have themselves administered it to disabled students. The SAT is almost without exception necessary for students wishing to transfer to four-year colleges. For hearing impaired students, a more appropriate test is the Stanford Achievement Test or Metropolitan Achievement Tests since the SAT is highly verbal and may not be an accurate reflection of the student's potential.[48] A special edition of the Stanford for hearing impaired students is available from the Office of Demographic Studies at Gallaudet College.

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[47] Helmer R. Myklebust, Arthur Neyhus, and Ann M. Mulholland. "Guidance and counseling for the deaf." American annals of the deaf 107 (1962), 386-87.

[48] Joseph Dengler. Personal communication, June 5, 1975.

Massachusetts Association for the Blind is an approved test center for administering the SAT to visually impaired students. The Association could also administer other tests, as well as transcribe a test onto tape or into large print. It is advisable that the community college counselor confer with the student's Massachusetts Commission for the Blind counselor prior to contacting Massachusetts Association for the Blind. If the student is not sponsored by Massachusetts Commission for the Blind, contact Marie Matava, Assistant Director of the Association.

Regarding use of the SAT with visually and other physically handicapped students, the counselor should obtain a copy of the College Entrance Examination Board brochure Admissions Testing Program for Handicapped Students. In it is contained information such as the availability of three editions of the SAT, regular-size type, large type, and braille.

Community college personnel who administer tests to disabled students, or who, for purposes of guidance and placement, assess the results of testing performed elsewhere, are advised to consult the following references:

Coping with the Unseen Environment: An Introduction to the Vocational Rehabilitation of Blind Persons. Herbert Rusalem.

> Chapter 8, "Vocational Diagnosis and Psychological Tests" discusses the use of intelligence, personality, manual aptitude and vocational interest tests which have been standardized for the sighted, and tests which have been developed specifically for blind persons. Contains references to journal articles and books (dating from the 1930's to mid 1960's) which may provide additional information.

"The Psycho-Educational Diagnostic Materials Currently in Use at Perkins School for the Blind." Carl J. Davis.

> This mimeographed report identifies, with some annotations, intelligence, personality, and vocational interest tests administered to visually impaired students at Perkins.

"Psychological Tests and Practices with the Deaf: A Survey of the State of the Art." Edna S. Levine. Volta Review 76 (May 1974), 298-319.

Based on a recent survey of psychologists working with deaf children and young adults, this article identifies instruments and practices employed, and reports on the difficulties encountered.

The Psychology of Deafness: Techniques of Appraisal for Rehabilitation. Edna S. Levine.

This resource addresses issues of test selection, administration, and interpretation. Of particular interest are general guidelines regarding the use of tests which have been standardized on nondisabled populations. See in particular pages 50-55, 83-88, 180-185, and 210-213.

"Vocational Guidance for the Deaf." Boyce R. Williams and McKay Vernon. In Hearing and Deafness. Hallowell Davis and S. Richard Silverman.

Concise evaluations of eight intelligence and personality tests commonly used with deaf and hard of hearing adults are presented.

"Psychosocial Evaluation of Individuals with Epilepsy." Phillip M. Rennick. In Epilepsy Rehabilitation. George N. Wright (ed.).

This chapter examines the validity of test information: intelligence measures; neuropsychological assessments; and personality testing.

RESOURCES

Persons & Organizations

ABT ASSOCIATES, INC.

Higher Education Facilities and Services for Students with Disabilities
John F. Doucette, Project Director
55 Wheeler Street
Cambridge, MA 02138
(617) 492-7100

AMERICAN PRINTING HOUSE FOR THE BLIND

Instructional Materials Reference Center
Carl W. Lappin, Director (IMRC)
1839 Frankfort Avenue
Louisville, KY 40206
(502) 895-2405

The Central catalog (7th edition) is available at the following locations in Massachusetts:

Boston Center for Blind Children
147 South Huntington Avenue
Boston, MA 02130
(617) 232-1710

Walter E. Fernald State School
Mildred F. Brazier School House
Box 158
Belmont, MA 02178
(617) 894-3600

Massachusetts Association for the Blind
120 Boylston Street
Boston, MA 02116
(617) 542-3106

Massachusetts Department of Education
Division of Special Education
271 West Boylston Street
West Boylston, MA 01583
(617) 835-6033

Regional Library for the Blind and Physically Handicapped
Perkins School for the Blind
175 North Beacon Street
Watertown, MA 02172
(617) 924-3434

CAMBRIDGE CENTER FOR ADULT EDUCATION

42 Brattle Street
Cambridge, MA 02138
(617) 547-6789

FITCH, DR. BRIAN

Center for Vocational Education
Ohio State University
1960 Kenny Road
Columbus, OH 43210
(614) 486-3655

LAURITSEN, ROBERT R.

Project Coordinator
St. Paul Area Technical Vocational Institute
235 Marshall Avenue
St. Paul, MN 55102
(612) 227-9121

LEARNING CENTER FOR DEAF CHILDREN

848 Central Street
Framingham, MA 01701
(617) 879-5110

MASSACHUSETTS COMMISSION FOR THE BLIND

39 Boylston Street
Boston, MA 02116
(617) 727-5550

MASSACHUSETTS REGISTRATION BOARD

100 Cambridge Street
Boston, MA 02202
(617) 727-3076

MASSACHUSETTS REHABILITATION COMMISSION

296 Boylston Street
Boston, MA 02116
(617) 727-2183

MATAVA, MARIE

Assistant Director
Massachusetts Association for the Blind
120 Boylston Street
Boston, MA 02116
(617) 542-3106

MOORE, KAY

Rehabilitation Services for the Deaf Office
Massachusetts Rehabilitation Commission
80 Boylston Street - Room 660
Boston, MA 02116
(617) 426-7224

NORTHERN ESSEX COMMUNITY COLLEGE

School of Continuing Education
Barbara Weber, Assistant Director
Elliott Street
Haverhill, MA 01830
(617) 374-0721

OFFICE OF DEMOGRAPHIC STUDIES

Gallaudet College
7th & Florida Avenue, N.E.
Washington, DC 20002
(202) 447-0301

POST, DR. JOHN

Project Career
Massachusetts Center for Occupational Education
100 Worcester Avenue - Route 9
Building 2 - Sun Life Office Park
Wellesley, MA 02181
(617) 235-7020

REGISTRY OF INTERPRETERS FOR THE DEAF

P. O. Box 1339
Washington, DC 20013

120.

REHABILITATION SERVICES FOR THE DEAF OFFICE

Massachusetts Rehabilitation Commission
80 Boylston Street - Room 660
Boston, MA 02116
(617) 426-7224

UNIVERSITY OF MASSACHUSETTS AT AMHERST

Division of Continuing Education
Amherst, MA 01002
(413) 545-0111

WARNOCK, LAWRENCE

Director of Employment Resources
Massachusetts Rehabilitation Commission
296 Boylston Street
Boston. MA 02116
(617) 727-2194

Publications

The academic advisement of disabled students. Institute proceedings, June 16-18, 1965. Hortence S. Cochrane et al (eds.). Syracuse, NY: Syracuse University. 1965. ED 011 422. $.94 microfiche, $3.58 hard copy, prepaid.

ERIC Document Reproduction Service
Box 190
Arlington, VA 22210

Admissions testing program for handicapped students. 1972. Free.

ATP for Handicapped Students
College Entrance Examination Board
Box 592
Princeton, NJ 08540

Arco-Rosen career guidance series. May be purchased individually, $1.95 paper; or $78.00 for complete 40-item set.

Arco Publishing Company, Inc.
219 Park Avenue South
New York, NY 10003

Coping with the unseen environment: an introduction to the vocational rehabilitation of blind persons. Herbert Rusalem. 1972. $11.50.

Teachers College Press
Columbia University
1234 Amsterdam Avenue
New York, NY 10027

OR

Monroe C. Gutman Library (ILL)
Harvard Graduate School of Education
6 Appian Way HV1652
Cambridge, MA 02138 .R87
(617) 495-3423

Counseling with deaf people. Allen E. Sussman & Larry G. Stewart (eds.). 1971. Free.

Deafness Research and Training Center
New York University School of Education
80 Washington Square
New York, New York 10003

Deaf persons in professional employment. Alan B. Crammatte. 1968. $12.75.

Charles C. Thomas, Publisher
301-327 East Lawrence Avenue
Springfield, IL 62717

Dictionary of occupational titles. U. S. Department of Labor. 1965. Currently being revised. Price not yet determined.

Superintendent of Documents
U. S. Government Printing Office
Washington, DC 20402

Epilepsy rehabilitation. George N. Wright (ed.). 1975. $15.00 hardcover, $10.00 paperback.

Little, Brown & Company
34 Beacon Street
Boston, MA 02106

OR

Massachusetts Rehabilitation Commission
Library
304 Boylston Street
Boston, MA 02116
(617) 727-2180

(ILL)
340.06

A guide to college/career programs for deaf students. E. Ross Stuckless and Gilbert L. Delgado (eds.). Revision expected to be completed by November 1975. Free.

Office of Educational Extension
National Technical Institute for the Deaf
One Lomb Memorial Drive
Rochester, NY 14623

AND

Office of Demographic Studies
Gallaudet College
7th & Florida Avenue, N.E.
Washington, DC 20002

Guiding the physically handicapped college student. Herbert Rusalem. 1962. $3.00.

Teachers College Press
Columbia University
1234 Amsterdam Avenue
New York, NY 10027

Hearing and deafness. Hallowell Davis and S. Richard Silverman. Third edition. 1970. $13.00.

Holt, Rinehard & Winston, Inc.
383 Madison Avenue
New York, NY 10017

OR

Boston University
Mugar Memorial Library
Interlibrary Loan
771 Commonwealth Avenue
Boston, MA 02215
(617) 353-3704

(ILL)
RF135
F70a

Improved vocational, technical, and academic opportunities for deaf people: research component. Final report. William N. Craig and Nona L. Burrows. Pittsburgh, PA: Pittsburgh University. 1969. ED 043 159. $.94 microfiche, $5.96 hard copy, pre-paid.

ERIC Document Reproduction Service
Box 190
Arlington, VA 22210

Improved vocational, technical and academic opportunities for deaf persons. Final report. 1974. Free.

Robert R. Lauritsen
Project Coordinator
St. Paul Area Technical Vocational Institute
235 Marshall Avenue
St. Paul, MN 55102
(612) 227-9121

Interviewing guides for specific disabilities. (diabetes, epilepsy, hearing impairments, heart disease, visual impairments, as well as Suggestions for using guides - specify one(s) desired). Free.

U. S. Employment Service
Manpower Administration
14th Street & Constitution Avenue, N.W.
Washington, DC 20210

Occupational briefs. 400 briefs, $112.

Chronicle Guidance Publications
Moravia, NY 13118

Occupational exploration kit. 1972. $135.00 school price.

Science Research Associates, Inc.
259 East Erie Street
Chicago, IL 60611

Occupational outlook handbook. U. S. Bureau of Labor Statistics. Published biennially. 1974-75 edition. $8.70.

U. S. Department of Labor
Bureau of Labor Statistics
1603-B JFK Federal Building
Government Center
Boston, MA 02203
(617) 223-6761

Physical disability - a psychological approach. Beatrice A. Wright. 1960. $10.95.

Harper & Row Publishers, Inc.
10 East 53rd Street
New York, NY 10022

Placing the blind and visually handicapped in professional occupations. Mary K. Bauman and Norman M. Yoder. 1962. Free.

Pennsylvania Department of Public Welfare
Bureau for the Visually Handicapped
Harrisburg, PA 17120

"The psycho-educational diagnostic materials currently in use at Perkins School for the Blind." Carl J. Davis. (Mimeograph). 1974. Free.

Carl J. Davis
Department of Psychology & Guidance
Perkins School for the Blind
175 North Beacon Street
Watertown, MA 02172
(617) 924-3434

"Psychological tests and practices with the deaf." Edna S. Levine. Volta review. 76 (May 1974), 298-319.

Monroe C. Gutman Library
Harvard Graduate School of Education
6 Appian Way
Cambridge, MA 02138
(617) 495-3423

(Photocopy can be obtained on premises for $.05/page.)

The psychology of deafness: techniques of appraisal for rehabilitation. Edna S. Levine. 1960. $13.00.

Columbia University Press
562 West 113th Street
New York, NY 10025

Rehabilitation of the deaf: a training guide. Eleventh Institute on Rehabilitation Services, New Orleans, LA. 1973. Free.

Arkansas Rehabilitation Research & Training Center
University of Arkansas
West Avenue Annex
346 North West Avenue
Fayetteville, AR 72701
(501) 575-3656

Rehabilitation practices with the physically disabled. James F. Garrett and Edna S. Levine (eds.). 1973. $15.00.

Columbia University Press
562 West 113th Street
New York, NY 10025

OR

Boston Public Library
P. O. Box 286
Boston, MA 02117
(617) 536-5400 X254

(ILL)
HD7256
.U5G28

Selected references on the vocational counseling, placement, and employment of handicapped workers. 1975. Free.

National Easter Seal Society for Crippled Children and Adults
2023 West Ogden Avenue
Chicago, IL 60612

"Sex and self: the spinal cord injured." Silas P. Singh and Tom Magner. Rehabilitation literature. 36 (January 1975), 2-10. Reprint may be available from the following source.

National Easter Seal Society for Crippled Children and Adults
2023 West Ogden Avenue
Chicago, IL 60612

They grow in silence: the deaf child and his family. Eugene D. Mindel and McCay Vernon. 1971. $5.45, pre-paid.

National Association of the Deaf
814 Thayer Avenue
Silver Spring, MD 20910

7

INSTRUCTIONAL SERVICES

It is neither expected, nor necessary, that community colleges modify the substantive content of courses in order to accommodate most physically disabled students.[1] Usually, the necessary adaptations are those which will facilitate the learning of regular course content: support services; modified classroom and laboratory procedures for instruction and testing; and equipment and curriculum materials adapted to the mobility and sensory capacities of the student.

Techniques and materials employed in remedial services for the general student body may be sufficient for the student who is disabled. Depending on the need of the individual student, though, curriculum materials for remedial instruction may have to be transcribed to another media, and modified tutorial procedures may be required.

Support Services

Blind or partially-sighted students are assisted by readers in performing library work or in studying course materials that have not been previously taped or brailled. Often the student will tape the reader's presentation so it can be reviewed at a later date. Readers who are taping materials which students will use for research papers must present complete bibliographic information on the text, as well as identify page numbers.

A number of community colleges have reported that fellow students serve as readers and are paid by work-study funds. While this is viable

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[1] Note the exception that certain deaf students, particularly those with severe language acquisition problems, may have special curricular needs. Materials specially developed for regular and remedial course instruction for these students are discussed in the sections "Curriculum Materials" and "Remedial Instruction" of this chapter.

in most respects, it can present a problem around exam time or when papers are due, when the reader may have to pursue his/her own studies and thus have limited time to assist the visually impaired student. For this reason, it is beneficial to have at least one of the student's cadre of readers come from outside the community college.

Massachusetts Commission for the Blind will subsidize a certain amount of the cost for readers. The student must keep a record of payments due each individual reader, since the Commission reimbursement is broken down by days, and not by payments to individual readers.

Students themselves are usually responsible for recruiting readers who are from outside the college. The job placement or work-study staff usually recruit readers from the student body. It is helpful if the reader is either in, or has previously taken, the course for which the reading is required. While sighted students may read on a voluntary basis, reimbursement is preferable for engendering a more sustained commitment to providing the service. One may contact the Carroll Rehabilitation Center, Protestant Guild for the Blind, and the Massachusetts Association for the Blind regarding volunteer readers.

Effective classroom interpreting for hearing impaired students necessitates the services of a professional interpreter. The student's Massachusetts Rehabilitation Commission counselor will refer the student to an interpreter and will decide on the number of interpreter service hours to be subsidized; the hourly rate is contingent on the skills of the interpreter. Interpreter time is subsidized for remedial sessions as well as classroom work. The Rehabilitation Services for the Deaf Office at Massachusetts Rehabilitation Commission in Boston maintains a roster of skilled interpreters; the counselor may contact Kay Moore, Interpreter Coordinator, regarding referral to persons who allow their names to be released outside the agency. It should be kept in mind that there is a shortage of interpreters in Massachusetts and that procurement of appropriate services may be a problem. A further discussion of the use of the

interpreter in the classroom is presented in the subsequent section, "Procedures for Instruction and Testing."

Notetaking assistance may be necessary for students with hearing or manual impairments and is arranged on a voluntary basis. Even if a student is a proficient speechreader, notetaking assistance may be necessary, given the obvious difficulty of looking at the speaker and taking notes at the same time. E. Ross Stuckless, of the National Technical Institute for the Deaf has developed a handbook, A Notetaking Procedure for Deaf Students in Regular Classes, which presents guidelines for the instructor, the notetaker, and the deaf student. The suggestions are pertinent as well to notetaking for students with other disabilities.

Visually and manually impaired students may choose to tape classroom lectures. While this is a commonly accepted practice, taping lectures as a substitute for procuring notes may present problems when the student wishes to review for exams, because playing back tapes may involve a good deal more time than reviewing notes.

Procedures for Instruction and Testing

Instructors should expect disabled students to acquire the same knowledge of subject matter that nondisabled students acquire. Rusalem cautions:

> ...colleges should maintain a realistic attitude toward grades. In some cases, disabled students are marked on the basis of real achievement tempered by sympathy, tolerance, or pity. These emotions have no place in grading. A disservice is done to the disabled student when he is allowed to believe that his work is better than it really is. Such misplaced "kindness" may deprive the student of an opportunity to really evaluate his academic capacities. Occasionally, it is not so much emotion which distorts a disabled student's grade as it is a desire on the part of the instructor to play the role of therapist. He may actually believe that a successful experience in the classroom will influence the student's personality development. The effects of such an action are complex and, for the lay person, relatively unpredictable. The college

> classroom is not designed for psychotherapy but for learning. Grades should represent actual performance rather than be used as a tool to evoke desired forms of student behavior.[2]

However, in certain instances faculty may have to examine the philosophy underlying the norms they have established for performance. For example, a language impaired student may answer automotive technology exam questions correctly, but with inadequate grammar or spelling. If the successful performance of the career for which the student is preparing is not dependent on written language skills, then the professor should not penalize the student by enforcing irrelevent performance criteria.

Neither should the student be penalized for meeting learning objectives via activities different from those used by able-bodied students. Where the purpose of a laboratory course is to expose students to processes he/she must understand, but not necessarily perform in the course of a career, then the student's observation in the laboratory should be accepted as an adequate substitute for actually performing experiments.

In some instances faculty may have to modify their method of teaching the class. At the beginning of the semester instructors should investigate with students procedures which are needed for optimum learning. Typical adjustments for visually impaired students are preferential seating, verbal presentation of material written on the blackboard, and spelling of new technical words. In demonstrating the use of equipment one should allow the visually impaired student an opportunity for hands-on exploration. Where this is not possible, at least a verbal description of the apparatus is necessary.

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[2] Herbert Rusalem. Guiding the physically handicapped college student. New York: Teachers College, Columbia University, 1962, p. 88.

Several community college personnel in Massachusetts have requested information on teaching mathematics to blind students. A helpful resource is Selected Bibliography on Mathematics for the Blind by Lawrence Geffen and Sandra Palmore. The materials referenced identify appliances and instructional techniques for use in teaching algebra, geometry, and advanced mathematics.

Techniques for laboratory instruction and participation are discussed in Laboratory Methods in Physics for the Blind by David Ray Henderson. Although focusing on physics instruction, the methods discussed are applicable to laboratory work in a number of technologies. The bibliography in the Henderson work identifies additional references relative to scientific instruction.

Personnel with inquiries regarding instructional techniques and materials appropriate for visually impaired persons may contact Susan Spungin, Specialist in Education at the American Foundation for the Blind. J. Albert Asenjo, Specialist in Independent Living at American Foundation for the Blind, can be contacted regarding laboratory/shop techniques and resources.

Adjustments the instructor can make to facilitate speechreading by hearing impaired students are:

- Provide good lighting
- Allow seating close to the front of the room
- Avoid walking around the room and turning one's back to the students
- Spell new words on the blackboard
- Do not lecture while writing on the blackboard
- When demonstrating the use of equipment, verbalize instructions before undertaking the demonstration, for students cannot watch the instructor's face and the demonstration at the same time
- Avoid smoking or covering the mouth
- Do not speak rapidly, exaggerate enunciation, or shout
- Find out what acoustical conditions are detrimental to students who use hearing aids; if possible, close windows when there is loud traffic outside or close classroom doors when there is noise in the hall

- Although students may appear to understand you, question them directly every so often to ascertain whether they actually do
- Encourage students to remind you to follow these suggestions, should you forget.

Because speechreading is only partially effective for receptive communication, it may be necessary to have an interpreter in the classroom. For courses where technical vocabulary is used, the instructor should confer with the interpreter before the semester begins and provide the interpreter with a list of the technical words. This will prepare the interpreter to fingerspell those words for which there are no signs, or to learn or develop signs for the words. A book depicting 465 new signs intended for use in secondary and postsecondary instruction is Signs for Instructional Purposes, by Barbara M. Kannapell et al. These signs have been developed for use in courses in biology, chemistry, mathematics, physics, psychology, humanities, economics, history, sociology, audiology, library science and physical education.

The interpreter should stand close to the instructor so that students can pick up the instructor's facial expressions and gestures. It is helpful for the instructor to pause briefly after using new words or proper nouns, so that the interpreter can fingerspell them. As is the case for speechreading, the instructor should verbally explain a procedure before demonstrating it, so that students can watch the interpreter and then focus on the demonstration. Additional recommendations regarding the use of an interpreter for classroom lectures and group discussions and the instruction of deaf students may be found in Welcome to the Quiet Life: A Handbook for Adult Education Teachers and Teacher Trainers, by Robert A. Luke.

The content of examinations should be the same for both nondisabled and disabled students; however, flexibility in administration procedures is necessary. When a reader or amanuensis is required, the student is usually responsible for making the necessary arrangements. Students

who need assistance from another person, or who type or record their exam answers will most likely take the test in another room to avoid disturbing the rest of the students. Instructors may allow students to take the examination home, if deemed appropriate.

Laboratory tests may present difficulties for the individual who has manual limitations. If the purpose of the test is to assess the student's understanding of procedures and principles, then the instructor should consider allowing the student to respond orally, or to record exam answers as a substitute for actually performing the laboratory tasks. Although some visually impaired students will be capable of undertaking laboratory activities without difficulties, others may require modified testing arrangements.

Expanded time allotments are left to the discretion of the instructor. When speed is a criterion in testing, the instructor should acknowledge that oral administration and dictating to an amanuensis do require additional time.

Curriculum Materials

While the content of texts and readings are suitable for most disabled students, the materials may have to be transcribed into a different media. Persons with visual impairments will most likely use braille, taped, or large print versions. Tapes are also useful for students who find it difficult to hold reading matter.

Students are generally responsible for obtaining braille or taped materials. Various personnel at the community college can assist the student in the following manner:

- Librarian or Office for Handicapped Students Services: obtain catalogs of the major suppliers (listed below)
- Registrar: arranges for students to preregister for courses two or three months before the semester begins, if possible

- Instructors: provide students and college bookstore with list of required texts two or preferably three months before the start of the course.
- Bookstore: if texts are not in stock, orders them immediately upon receiving list from instructor, for if materials are not already available in braille or tape, the student will have to purchase the text and forward it for transcription, which can take two months or more.

The following are sources for taped, braille or large print materials:

- American Printing House for the Blind, Instructional Materials Reference Center

  American Printing House for the Blind catalogs list braille, recorded and large print materials which may be purchased. If material is not available from APHB, one may send a reference request to the Instructional Materials Reference Center; the request should give a complete bibliographic citation, indicate media preferred, and mention that the material is not available from APHB. The Instructional Materials Reference Center will check its Central Catalog of Volunteer Produced Textbooks and inform the student of other possible sources where the text may be obtained.

- Library of Congress, Division for the Blind and Physically Handicapped

  Series of catalogs list braille books, tapes and talking books which can be obtained on loan from regional libraries. Since there are numerous catalogs, it may be easier to determine the availability of a text by contacting the Regional Library for the Blind and Physically Handicapped at the Perkins School for the Blind; this library houses an alphabetical card catalog of Library of Congress Listings. This is a more general reading collection but may have readings for courses in literature, social sciences, arts and history.

- National Braille Association, Braille Book Bank

  Catalog identifies braille holdings. This collection is a major source for language, technical and mathematics materials. Thermoform copies of books are available at a cost of about $.04 per page (1 braille page = approximately 1/3 regular printed page).

- National Braille Press, Inc.

  This organization will transcribe materials to 2 track cassettes, 2 or 4 track tapes, braille, or large print. One should contact the National Braille Press only after determining that needed materials are not available elsewhere in a transcribed media. There is no cost for transcription services requested by students. There is a $3.00 handling fee when request is made by an agency such as a college or library. Student may forward blank cassette or tape. Otherwise, there is a materials charge of $1.50 per 90-minute cassette, and $1.75 per 1800 Mylar tape, 7" reel. For braille materials, string-tie binding is free and spiral binding is $2.00 per braille volume.

  The students must forward the book to be transcribed. Texts require 2 months for taping; large type, 3 months; and nontechnical braille 2-3 months. For texts in mathematics, computer technology and science, it may be necessary to use Nemeth Code transcription, which involves a special braille notation system for symbols. Braille transcription using the Nemeth Code may take up to 6 months.

  Contact Joyce Graff at the National Braille Press for registration forms and additional information.

- Recording for the Blind, Inc.

  Catalog lists reel-to-reel tapes or cassettes available on loan. Recording for the Blind is probably the most likely source for texts in these media.

The suggested procedure for procuring cassettes or tapes for visually or manually impaired persons is to refer to these sources, in the following sequence:

1. Recording for the Blind, Inc.
2. Regional Library for the Blind and Physically Handicapped, Library of Congress.
3. National Braille Press, Inc.

For braille materials, one should contact:

1. National Braille Association, Braille Book Bank
2. Regional Library for the Blind and Physically Handicapped, Library of Congress.
3. Instructional Materials Reference Center
   American Printing House for the Blind.
4. National Braille Press, Inc.

For additional information on sources of educational materials for students who are visually impaired, the community college should obtain the 21-leaflet series Sources of Reading Materials for the Visually Handicapped, published by the American Foundation for the Blind, Inc. The resources listed include: braille publishers, library reference services, reading aids, volunteer services, and periodicals in various media.

As indicated previously, deaf students may require specially mediated materials and curricula adapted to their special learning needs. Captioned films may be beneficial for the instruction of these students. Since the federal government's system for distributing captioned films is currently in transition from one agency to another, it is possible to provide only brief information about procuring these films. At the present time there are few captioned education films aimed directly at the community college population; there are a limited number for secondary school students and for adults, and some of these may be appropriate for certain community college courses. The new national coordinating agency for captioned films is the Specialized Office for Materials Distribution, part of the National Center on Educational Media and Materials for the Handicapped. The films are actually distributed via depositories located throughout the country. Because of the current transition, it is suggested that for further information and referral interested persons contact the representatives at the depositories which serve Massachusetts. Persons in eastern Massachusetts can contact Joan Carlson at the Rhode Island School for the Deaf, and persons in Worcester, Springfield, and areas west can contact Philip Cronlund at the American School for the Deaf. Information about the Catalog of Captioned Films for the Deaf may also be available from these sources.

Many of the instructional materials which are especially appropriate for use by deaf students are developed at institutions with a relatively large deaf population and are primarily for in-house use. The National Technical Institute for the Deaf designs many of its own instructional materials and methods. Recognizing that students progress at different paces, individualized programs are seen as viable means of instruction.

In both the Mathematics and Physics Learning Centers, for example, courses are arranged in sequences of modules, with students working at their own speed. At the Communication Center the aim is to assist students in developing language, speech, lipreading, and/or manual communication skills. For further information about Communication Center materials contact Kathleen Crandall. Marvin C. Sachs can be contacted about the Math Learning Center, and Jack Smith in the Office of Educational Extension at the National Technical Institute for the Deaf can direct inquiries about other instructional areas, including the Physics Learning Center, to the proper source(s).

Although a number of colleges which have programs for deaf students have probably produced in-house materials, it is difficult to learn of the existence of these materials. However, the newly established Specialized Office for Deaf and Hard of Hearing, located at the University of Nebraska, may remedy the problem somewhat. Part of the National Center on Educational Media and Materials for the Handicapped, the Specialized Office presently acquires only a limited number of postsecondary instructional materials, but it may at least be able to refer persons to appropriate sources. Address inquiries to the director, Robert E. Stepp.

The National Center on Educational Media and Materials for the Handicapped (NCEMMH) mentioned above in relation to deaf students is concerned with other handicaps as well. It is a network of local, regional, and national resources which is developing, identifying, and disseminating educational materials, especially non-print media, relevant to handicapped students. NCEMMH is not focusing on postsecondary materials, but some of the materials developed for the secondary school level may be appropriate for certain students at the beginning of their college programs. A limited amount of adult education and postsecondary materials is available. Through its various Area Learning Resource Centers and Specialized Offices, NCEMMH plans to develop educational materials, as well as provide access to materials developed locally and those published commercially.

One means of providing access to materials is through the computerized data base and retrieval system--National Instructional Materials Information System (NIMIS). Persons seeking specific information on curriculum can utilize NIMIS; materials in the data base will be available on loan through the NCEMMH network. At the time of this writing NIMIS is not quite operational but will commence in autumn, 1975. For information about NIMIS or other facets of NCEMMH contact Jeannette Schiller at the Northeast Area Learning Resource Center. Many of the NCEMMH services and programs are currently in the developing stages and may not yet be fully operational, but it appears that the potential is present for access to information about instructional materials and for access to the materials themselves.

A program which is operational at the present time involves the provision of workshops on designing and producing mediated instructional materials--transparencies, tapes, training modules, etc. Interested community college instructors can also contact Ms. Schiller for information on this program.

Aids and Equipment

There are numerous types of aids and equipment that disabled students can use in the classroom, library and laboratory. For visually impaired persons, for example, the Simpsor 260 volt-ohm milliameter has been adapted for reading through sound and touch, rather than vision. The adapted version has a braille scale and audio circuit in place of the meter. One obtains the reading by turning the dial until the sound signal disappears and then by reading the position of the pointer on the braille dial. Calculators which print braille numbers on paper tape are available. A raised line drawing kit is helpful for instruction in math and other subjects involving graphs or diagrams; the student can also use raised line drawings in taking tests. An optical enlarger which enlarges and projects printed matter onto a screen is useful for partially-sighted persons.

Persons with limited functioning of the upper extremities may use different kinds of typewriter adaptations, such as the Keyboard Rest, which prevents persons with weakness or incoordination from inadvertently striking typewriter keys. A mouthstick can be used to operate typewriters and calculators. Where classrooms or laboratories have fixed furnishings or otherwise prevent free wheelchair travel, the instructor's use of an overhead projector or slanted mirror will permit the mobility-impaired student to view demonstrations from his/her seat.

For further information on equipment and aids useful in instructional settings, one should consult the following catalogs:

Catalog of Aids and Appliances. American Foundation for the Blind, Inc.

This is an annual catalog, available in both print and braille, which lists a number of categories of aids: tools and instruments, writing and drawing, mathematical, geographical, musical. Specific examples include braille writing slates, embossed maps, slide rules, raised line drawing kits. Most items can be ordered directly from the American Foundation for the Blind; if not, addresses of suppliers are provided.

Aids to Independent Living: Self-Help for the Handicapped. Edward Lowman and Judith Klinger.

For a comprehensive awareness of the many devices available to assist physically disabled persons, the instructor or counselor should consult this several-hundred page publication. It provides a description, illustration, and availability information for devices such as reading stands, page turners, typewriters, and hundreds of other types of aids and equipment. Cost information is generally not noted. Chapters are arranged by subject area and include a brief introduction and bibliography. In addition, there is a general bibliography and listings of the following: films; periodicals dealing with rehabilitation and the handicapped; names and addresses of manufacturers, distributors and designers of aids; names and addresses of educational and special services agencies.

Catalog of Instruments and Materials for the Visually Limited. Science for the Blind Products.

Among the instruments available are speech compressors (which increase the speed of normal speech so that blind persons may listen to recorded speech at a faster pace than normally spoken),

electronic calculators with braille print-outs, precision thermometers, closed circuit TV magnifying system, and the adapted volt-ohm milliameter. Tape recorded instructions can be purchased to elucidate the operation of specific instruments, as can a comprehensive print catalog which includes descriptive information and abridged instructions for special instruments. A recorded catalog is available at no cost. Science for the Blind Products is a company which develops, manufactures, and sells special aids for visually impaired persons.

I and B List. Howe Press. Perkins School for the Blind.

A number of braille aids are available--braillers, pocket and desk slates, styluses, paper, etc. Detailed descriptions of products can be obtained in print and braille.

Aids for Handicapped Readers. Library of Congress. Division for the Blind and Physically Handicapped.

Reading and writing devices for disabled persons are identified with a brief description. Sources for procuring these devices are listed with addresses. Magnifiers, mouthsticks, cassette recorders and players, and mailing containers for braille materials and recordings are among the items included.

If students need special equipment in order to study or perform laboratory or shop work, Massachusetts Rehabilitation Commission or Massachusetts Commission for the Blind may subsidize the purchases. Subsidies are determined on an individual basis by the student's agency counselor; generally, however, neither agency supplies costly equipment for purposes of the client's education.

A possible source of funding for instructional equipment is the grant program authorized by the Higher Education Act of 1965, Title VI. Funds are administered through the Massachusetts 1202 Commission (which has replaced the Higher Education Facilities Commission). Both public and private postsecondary institutions are eligible to apply; however monies are quite limited. Community colleges interested in applying for funds for special equipment (e.g. braille computer terminals) should contact the Massachusetts 1202 Commission for further information.

Remedial Instruction

In providing remedial instruction to most students who are visually impaired, hard of hearing, or orthopedially handicapped, the community college may use those curriculum materials that are used with the general student body. However, as is the case with regular course instruction texts, remedial educational materials may have to be transcribed to a media useable by the disabled student. Equipment and aids, such as the raised line drawing kit which permits the visually impaired student to draw and tactually read diagrams, may be necessary also.

At times, though not always, remedial services for disabled students may require additional time and more individualization than is generally accorded nondisabled students. For example, in teaching basic mathematical skills, it may be necessary for the manually limited student to dictate each step of the computational procedure to a tutor who then writes the numbers down; or the student working with a braille text may need a longer time to read a braille passage than would a student who can read a printed text.

Remedial instruction personnel can refer to the resources cited in the previous sections of this chapter for further information on media, techniques and equipment.

Remedial instruction for severely language impaired deaf students may necessitate a more radical modification of techniques, materials, and program organization. A number of exemplary postsecondary programs for deaf students provide a preparatory program prior to the student's enrollment in a regular course, usually during the summer before the first fall semester. Elements common to the preparatory semesters at these colleges are academic/vocational assessment and career exploration. (See chapter "Counseling and Advisement.") The third element is intensive remedial instruction with emphasis on communication skills.

The preparatory phase of the Program for Deaf Students at St. Paul Technical Vocational Institute, St. Paul, Minnesota, includes the following remedial courses:

- Communications. Two communications classes are taught daily. One class is Communications, Reading and the second class is Communications, English. The communications classes enable students to identify common problems in English usage, spelling, punctuation and capitalization. Major emphasis is placed on enabling students to express themselves clearly and concisely through written, spoken and manual responses. Student requirements include term papers, periodic examinations and individual contracts.

- Mathematics. Mathematics provides students with basic mathematical skills such as addition, subtraction, multiplication, division, fractions and decimals, linear measurement and their practical application. For those students who have mastered these skills, algebra and trigonometry are available. At all levels students proceed at their own pace and are evaluated individually when they feel they have mastered the subject matter. Additionally, this course offers pre-physics presentations since more than half of the Regular Programs at TVI require the successful completion of a course in physics for graduation...The nation's switch to the metric system is reflected in the Mathematics curriculum. Practical applications of the metric system are provided routinely.

- Formulas. The nature of technical vocational education is such that basic knowledge of mathematical concepts are required for successful matriculation. It was self-evident during the first year of the Program for Deaf Students that large numbers of students were having difficulties in their studies due to the inability to make practical application of basic mathematical formulas. A course was initiated to provide base knowledge and practical application of formulas covering such areas as: 1) area and volume of squares, rectangles, triangeles and circles, 2) Fahrenheit-Centigrade conversion and applications to physics, and 3) square roots.

- Manual Communications. Manual communications as part of the Preparatory Program has enabled a large number of students to improve their over-all communication skills. Manual communications, or sign language, is also offered to hearing TVI students, to TVI regular faculty and to the community at large. In terms of the Preparatory Program, Manual Communications is an optional course. The Program for Deaf Students serves students from a wide geographical base, and students with widely varying

> educational backgrounds. This course has proven to be of value to students who have been labeled as "oral failures" and who otherwise lack a single satisfactory communication channel.[3]

The majority of deaf students enrolled at St. Paul Technical Vocational Institute begin their studies as Preparatory students. The Preparatory Program is seen as an invaluable tool for assisting the student in making the transition from secondary school to a "regular" postsecondary program. Robert R. Lauritsen, Coordinator of the Program for Deaf Students, has indicated that the curriculum guides used in the Preparatory Program are primarily for "in-house" use at this time, but that an effort will be made in the future to put them in a format exportable to other colleges. Mr. Lauritsen has suggested that Massachusetts community college personnel wishing to implement similar preparatory programs schedule a visit to St. Paul TVI, where the staff will gladly share program information and discuss the curriculum guides.

The Tutorial Center at Gallaudet College in Washington, D.C. also provides exemplary remedial assistance to its deaf students both for improvement of basic skills and for help in specific college courses. A summer session for entering students offers courses in Algebra I and II, English Fundamentals (practice in the use of basic English sentence patterns), Composition and Reading, and Manual Communication. Mathematics texts used by the Tutorial Center in the summer session (and by the Math Department during the academic year) are Holt Algebra I and Holt Algebra II; materials for the Composition and Reading course at the Tutorial Center are Encounters: A Basic Reader; Reading and Word Study; and Steps in Composition.

A successful alternative to traditional remedial English courses for deaf persons has been developed and implemented at Gallaudet's

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[3] Robert R. Lauritsen. Improved vocational, technical and academic opportunities for deaf persons. Final report. St. Paul, Minnesota: St. Paul Technical Vocational Institute, 1974, pp. 15-22.

Tutorial Center. The English-as-a-Second-Language (ESL) methodology commonly used to teach English to foreign-born persons has been adapted to teach the English language to prelingually deaf persons. For an introduction to the use of this ESL technique remedial instructors are encouraged to read the following articles:

"The ESL Approach to Teaching English to Hearing Impaired Students." J. Philip Goldberg and Marcia B. Bordman. American Annals of the Deaf 120 (February 1975), 22-27.

"English Lanugage Instruction for the Hearing Impaired: An Adaptation of ESL Methodology." J. Philip Goldberg and Marcia B. Bordman. TESOL Quarterly 8 (September 1974), 263-70.

The adapted ESL materials used at Gallaudet are scheduled for publication in Fall, 1975. Community college instructors may contact any of the three authors, Marcia Bordman, Patricia Byrd, and Bernadene Schlien, at the Gallaudet College English Department for further information on this approach and on the availability of the published materials.

J. Philip Goldberg, former director of the Tutorial Center and now Professor of English at Gallaudet College, will most likely conduct a summer course, "Teaching English to Non-native Users with Emphasis Upon the Needs of Non-Hearing Students." It is anticipated that the course will be held either during one of the Graduate School's summer sessions or in a two- or three-week "mini-course" format for the Office of Continuing Education. Personnel may contact Dr. Goldberg regarding attending these courses. Dr. Goldberg has also offered to discuss with Massachusetts community college personnel the problems involved in the acquisition of English by prelingually deaf adults.

RESOURCES

Persons & Organizations

ASENJO, J. ALBERT

Specialist in Independent Living
American Foundation for the Blind, Inc.
15 West 16th Street
New York, NY 10011
(212) 924-0420

BORDMAN, MARCIA

OR

PATRICIA BYRD, BERNADENE SCHLIEN

Department of English
Gallaudet College
Kendall Green
Washington, DC 20002
(202) 447-0314

CARLSON, JOAN

Depository #44-Captioned Films for the Deaf
Rhode Island School for the Deaf
Corliss Park
Providence, RI 02908

CARROLL REHABILITATION CENTER FOR THE VISUALLY IMPAIRED

Alice Kelly
770 Center Street
Newton, MA 02158
(617) 969-6200

CRANDALL, DR. KATHLEEN

Communication Center
National Technical Institute for the Deaf
One Lomb Memorial Drive
Rochester, NY 14623
(716) 464-6331

CRONLUND, PHILIP

Depository #21-Captioned Films for the Deaf
American School for the Deaf
139 North Main Street
West Hartford, CT 06107

GOLDBERG, DR. J. PHILIP

Department of English
Gallaudet College
Kendall Green
Washington, DC 20002
(202) 447-0314

GRAFF, JOYCE

Director of Volunteers
National Braille Press, Inc.
88 St. Stephen Street
Boston, MA 02115
(617) 266-6160

LAURITSEN, ROBERT R.

Project Coordinator
St. Paul Area Technical Vocational Institute
235 Marshall Avenue
St. Paul, MN 55102
(612) 227-9121

MASSACHUSETTS ASSOCIATION FOR THE BLIND

Lois Cato
120 Boylston Street
Boston, MA 02116
(617) 542-3106

MASSACHUSETTS 1202 COMMISSION

c/o Burton I. Wolfman
Undersecretary for Educational Affairs
18 Tremont Street-12th Floor
Boston, MA 02108
(617) 727-7785

MOORE, KAY

Rehabilitation Services for the Deaf Office
Massachusetts Rehabilitation Commission
80 Boylston Street-Room 660
Boston, MA 02116
(617) 426-7224

NATIONAL CENTER ON EDUCATIONAL MEDIA AND MATERIALS FOR THE HANDICAPPED

220 West 12th Avenue
Columbus, OH 43210
(614) 422-7596

PROTESTANT GUILD FOR THE BLIND

Edna Dana
456 Belmont Avenue
Watertown, MA 02172
(617) 926-4100

SACHS, MARVIN C.

Acting Chairman
NTID Mathematics
National Technical Institute for the Deaf
One Lomb Memorial Drive
Rochester, NY 14623
(716) 464-6400

SCHILLER, JEANNETTE

Media Materials Consultant
Northeast Area Learning Resource Center
168 Bank Street
Hightstown, NJ 08520
(609) 443-5753

SMITH, JACK

Assistant Dean for Educational Extension
Office of Educational Extension
National Technical Institute for the Deaf
One Lomb Memorial Drive
Rochester, NY 14623
(716) 464-6302

SPUNGIN, DR. SUSAN

Specialist in Education
American Foundation for the Blind, Inc.
15 West 16th Street
New York, NY 10011
(212) 924-0420

STEPP, DR. ROBERT E.

Director
Specialized Office for Deaf and Hard of Hearing
University of Nebraska-Lincoln
175 Nebraska Hall
Lincoln, NE 68508
(402) 472-2141

Publications

Aids for handicapped readers. Reference circular. 1972. Free.

Library of Congress
Division for the Blind & Physically Handicapped
Reference and Information Section
1201 Taylor Street, N.W.
Washington, DC 20542

Aids to independent living: self-help for the handicapped. Edward Lowman and Judith Klinger. 1969. $42.50 plus postage.

McGraw Hill Book Co.
Order Services
Princeton-Hightstown Road
Hightstown, NJ 08520

OR

Massachusetts Institute of Technology (ILL)
Humanities Library RD755
14S-224 .L918
Interlibrary Loan
Cambridge, MA 02139
(617) 253-5682

Catalog of aids and appliances. Published annually, each summer. Free.

American Foundation for the Blind, Inc.
Publications Division
15 West 16th Street
New York, NY 10011

Catalog of captioned films for the deaf. Vol. I: educational titles. Captioned Films for the Deaf Distribution Center. Washington, DC: U. S. Department of Health, Education and Welfare. 1974. Free. Will soon be revised.

Contact Joan Carlson or Philip Cronlund for information. (See their entries in Persons & Organizations for addresses.)

Catalog of instruments and materials for the visually limited. Free.

Science for the Blind Products
221 Rock Hill Road
Bala-Cynwyd, PA 19004
(215) 664-9429

Encounters: a basic reader. Paul Pimsleur and Donald Berger. 1974. $3.95 paper text edition.

Harcourt Brace Jovanovich, Inc.
757 Third Avenue
New York, NY 10017

"The ESL approach to teaching English to hearing impaired students." J. Philip Goldberg and Marcia B. Bordman. American annals of the deaf 120 (February 1975), 22-27. $.10/page, photocopy.

American Annals of the Deaf
Suite 11
5034 Wisconsin Avenue, N.W.
Washington, DC 20016

AND

Research Library
Perkins School for the Blind
175 North Beacon Street
Watertown, MA 02172
(617) 924-3434

"English language instruction for the hearing impaired: an adaptation of ESL methodology." J. Philip Goldberg and Marcia B. Bordman. TESOL Quarterly 8 (September 1974), 263-70. $1.50 photocopy.

Boston University
Mugar Memorial Library
Interlibrary Loan
771 Commonwealth Avenue
Boston, MA 02215
(617) 353-3704

Holt algebra I. E. D. Nichols et al. 1974. $8.28 text edition, $11.04 teacher's edition.

Holt, Rinehart & Winston, Inc.
383 Madison Avenue
New York, NY 10017

Holt algebra II with trigonometry. E. D. Nichols et al. 1974. $8.64 text edition, $11.04 teacher's edition.

Holt, Rinehart & Winston, Inc.
383 Madison Avenue
New York, NY 10017

I and B list. Howe Press. Free.

Howe Press
Perkins School for the Blind
175 North Beacon Street
Watertown, MA 02172
(617) 924-3434

Laboratory methods in physics for the blind. David Ray Henderson. Pittsburgh, PA: Pittsburgh University. 1965. ED 011 155. $.94 microfiche, $4.69 hard copy, pre-paid.

ERIC Document Reproduction Service
Box 190
Arlington, VA 22210

A notetaking procedure for deaf students in regular classes. E. Ross Stuckless. Occasional paper #1. Rochester, NY: Rochester Institute of Technology. 1969.

Wallace Memorial Library (ILL)
Interlibrary Loan
Rochester Institute of Technology NTID
One Lomb Memorial Drive 2395
Rochester, NY 14623 .S 78

Reading and word study: for students of English as a second language. Kenneth Croft. 1960. $5.25 paper text edition.

Prentice-Hall, Inc.
Englewood Cliffs, NJ 07632

Selected bibliography on mathematics for the blind. Lawrence F. Geffen and Sandra J. Palmore. Ypsilanti, MI: Eastern Michigan University. 1969. ED 036 018. $.94 microfiche, $1.76 hard copy, pre-paid.

ERIC Document Reproduction Service
Box 190
Arlington, VA 22210

Signs for instructional purposes. Barbara M. Kannapell, Lillian B. Hamilton, and Harry Bornstein. Washington, DC: Gallaudet College Press. 1969. $4.50 paperback.

Gallaudet College Bookstore
7th and Florida Avenue, N.E.
Washington, DC 20002

Sources of reading materials for the visually handicapped. $1.50.

Publications Division
American Foundation for the Blind, Inc.
15 West 16th Street
New York, NY 10011

Steps in composition. Lynn O. Troyka and Jerrold Nudelman. 1972. $5.35 paper text edition.

Prentice-Hall, Inc.
Englewood Cliffs, NJ 07632

Welcome to the quiet life: a handbook for adult education teachers and teacher trainers. Robert A. Luke. 1974. $.50.

Center for Continuing Education
Gallaudet College
Kendall Green
Washington, DC 20002

Sources of Mediated Curriculum Materials

AMERICAN PRINTING HOUSE FOR THE BLIND

Instructional Materials Reference Center
Carl W. Lappin, Director (IMRC)
1839 Frankfort Avenue
Louisville, KY 40206
(502) 895-2405

Catalog of hand-transcribed braille masters available for vacuum-forming at APH. Free.

Central catalog of volunteer-produced textbooks. See page 117 for sources where available in Massachusetts.

General catalog of braille publications. Free.

General catalog of large type textbooks. Free.

General catalog of talking books. Free.

LIBRARY OF CONGRESS

Division for the Blind and Physically Handicapped
1201 Taylor Street, N.W.
Washington, DC 20542

Series of catalogs. Free.

NATIONAL BRAILLE ASSOCIATION

Braille Book Bank
85 Godwind Avenue
Midland Park, NJ 07432
(201) 447-1484

Catalog. Free.

NATIONAL BRAILLE PRESS, INC.

Joyce Graff, Director of Volunteers
88 St. Stephen Street
Boston, MA 02115
(617) 266-6160

RECORDING FOR THE BLIND, INC.

215 East 58th Street
New York, NY 10022
(212) 751-0860

Catalog. $2.00.
Two supplements. Free.

REGIONAL LIBRARY FOR THE BLIND AND PHYSICALLY HANDICAPPED

Perkins School for the Blind
175 North Beacon Street
Watertown, MA 02172
(617) 924-3434

8

JOB PLACEMENT

Realistically speaking, the placement of a disabled student may require efforts beyond those involved in the placement of nondisabled students. However, as was borne out by responses to the Job Placement questionnaire, the placement office will rarely have to assume total responsibility for procuring employment for all students who are handicapped. Some, like their able-bodied peers, will find jobs by themselves; others will rely exclusively on the placement services of the Massachusetts Commission for the Blind or Massachusetts Rehabilitation Commission; and still others will be adequately served by the same college placement efforts that suffice for the general student population. It is essential, though, that community college placement offices be aware of the techniques involved in placing persons who are handicapped and be prepared to offer the appropriate gamut of services if called upon to do so.

This chapter examines the techniques of job modification and job development, and identifies the resources--agency services, legislation and literature--which contribute to successful placement and job retention of persons with physical impairments.

Interagency Coordination

Both Massachusetts Rehabilitation Commission and Massachusetts Commission for the Blind are, of course, central resources for placement-related matters. Both encourage the active participation of the community college and stress the importance of collaboration throughout the placement process, to coordinate efforts and to avoid duplication of services. Such coordination is vital. On the one hand, agency counselors, as will be discussed below, have special expertise which may be needed for analyzing, modifying and factoring jobs, and for encouraging the reluctant employers to hire handicapped persons; they are familiar with the resources of their agency, such as subsidies for conversion or purchase of equipment which can make a job viable for an individual. The community college, on the

other hand, is familiar with the student's training program and skills. The placement office usually builds up a network of local contacts--businesses, industries, and organizations--which frequently employ its graduates. Also, as is the case at Middlesex Community College, Department Chairpersons of various career programs are often instrumental in developing placement contacts. The degree to which the agency, the community college or the student will assume responsibility for job placement will most likely vary from case to case.

Job Adaptation

The student who is sponsored by Massachusetts Rehabilitation Commission and Massachusetts Commission for the Blind for enrollment in a career program most likely will come to the community college with some idea of what course of study he/she would like to pursue, because the student will have discussed occupational goals in terms of interests, aptitudes and physical capabilities with his/her agency counselor. In the event that career interests have changed while the student is in college, he/she is likely to have discussed this with the agency counselor. If a student is not agency-sponsored, career advisors at the community college will most likely have counseled the student regarding a viable occupation for which to prepare. Thus, by the time the student starts his/her job seeking, the placement staff will not usually have to question the appropriateness of a certain <u>type</u> of occupation for that student.

The job placement staff will, however, have to concern itself with the suitability of a <u>specific</u> job as defined by the employer. Individual jobs which initially seem inappropriate for a student can often be adapted to the capacities and physical limitations of the individual, without sacrificing the performance demanded by the employer. Such alterations in equipment, procedures, and physical environment, as well as the use of special aids, are commonly referred to as job modifications or adaptations.

If there is a question as to the appropriateness of or the types of modifications necessary for a certain job, the student and community college placement staff should call upon Massachusetts Rehabilitation Commission or Massachusetts Commission for the Blind to examine that job. Usually the student's agency counselor will assess the component tasks, equipment, and architectural accessibility relative to a job. If necessary, the counselor will call for the consultation of the agency specialists. At Massachusetts Rehabilitation Commission, this specialist is Charles Snell, Industrial Engineer. John Robichaud, Job Engineer at Massachusetts Commission for the Blind, is the specialist in hardware modification; William Villa is the Employment Specialist and may perform task analyses on the job site.[1]

A disabled veteran can contact the Jobs for Veterans Program sponsored by the U. S. Department of Labor and the National Alliance of Businessmen. James Greene, Manager of the program at the National Alliance of Businessmen, will visit job sites and suggest modifications, usually in the form of procedural changes.

One should keep in mind that not all jobs can be modified in ways sufficient to serve the needs of both employer and employee, and that many jobs will require no modification at all. In between are the jobs that can be successfully performed if the necessary modifications are made. Decisions as to viability of a job and the types of modifications needed rest ultimately with the student, the agency counselor, and at times, the student's physician. However, community college placement offices should be aware of the types of adaptations which are feasible, so that staff do not overlook potentially viable job placements, and so that they can

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[1] Individuals with vision problems who are not declared legally blind and hence not formally sponsored by Massachusetts Commission for the Blind may require modifications in certain aspects of jobs. Both Mr. Robichaud and Mr. Villa have agreed to respond to community college inquiries regarding job adaptations and placement procedures for such individuals.

discuss the options for modification with prospective employers. The following sections serve as an introduction to adaptation techniques. The interesting document prepared by the International Labour Office of the United Nations, Adaptations of Jobs for the Disabled, provides further information.

Equipment Modification

There are a variety of ways in which equipment can be modified for persons with physical impairments.[2] A hand lever may be substituted for a foot lever if the client has limited mobility of the lower extremities. If a person can exert only limited pressure of the hands or arms, a control can be lengthened to provide greater leverage, thus necessitating less force for operation, or power-assisted controls can be substituted. Massachusetts Rehabilitation Commission generally does not pay for such types of adaptations, but will identify the needed modification and then refer the employer to a company which can adapt the equipment.

The Massachusetts Commission for the Blind often pays for the conversion of equipment. Switchboards can be converted to signal by sound rather than light; and electronic test equipment which usually gives a visual display can be adapted to provide a braille display.

Procedural Modification

Changes in job procedures are referred to by various terms such as job restructuring, job reorganization, systems change, and job factoring. For example, if a blind typist routinely has to transfer information to a standardized form (in a social service agency, for example), Massachusetts Commission for the Blind can develop a "key sheet" i.e., a key which

[2] Equipment which is modified can still be used by able-bodied persons.

indicates to the blind employee how many spaces to indent for each item and how many lines to move vertically from item to item. Then the key is transcribed into braille, and the employee can use it as a guide. Since the margin on the typewriter must remain the same in order for the key sheet to be used successfully, the appropriate margin is notched if other employees use the same typewriter. This relatively simple procedure enables a blind employee to perform a specific task.

When a person cannot perform a certain job task, it is often feasible to substitute one task for another. For example, in analyzing a job for a deaf person, the agency or community college placement counselor, or the applicant him/herself, may ask the prospective employer what percentage of the job involves answering the telephone. The employer might respond that the position, for example secretarial, involves about 5% time for answering the phone. One may then ask how many other similar positions exist in the particular department at the firm, and whether the applicant might trade off the telephone answering task with a hearing co-worker for another task.

Procedural adaptations may be necessary for health and safety reasons, and in such cases the individual's personal physician or the industrial physician should be consulted. Persons with cardiac conditions can modify their daily work schedule in order to safely assume the physical demands of a job. It has been determined, for example, that:

> ...the same total work output can be achieved with remarkable reduction of physiologic strain by reducing the duration of work periods, despite shortening of rest pauses. Work levels which lead rapidly to exhaustion when 3 minutes of work alternate with 3 minutes of rest can easily be tolerated by the same subject if the work period is reduced to 1 minute or 30 seconds, alternating with rest periods of equal duration. In each case the total output and the total duration of both work and rest periods are the same.[3]

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[3] H. Christensen. "Speed of work." Ergonomics 5 (1962). In Leon J. Warshaw, "Employability of the patient with heart disease: how is it evaluated?" Journal of chronic diseases 18 (1965), 942.

Physical Environment Modification

One facet of physical environment modification is the removal of physical barriers. Regardless of federal and state legislation regarding the elimination of barriers, one should not take for granted that a job site, even in a public building, is accessible. The job placement officer, the student, or the agency counselor should always ask the employer about accessibility features. If the employer is not sure whether the job site can accommodate a person with a mobility impairment, the agency counselor may visit the site to determine its accessibility. A brochure which can orient job placement personnel to accessibility, and which will be helpful in questioning the employer about it, is the Guide for Federal Agency Coordinators in Selective Placement of the Handicapped: Identifying and Eliminating Architectural Barriers, published by the United States Civil Service Commission. Based on the American National Standards Institute specifications, it identifies architectural accommodations for persons with walking, visual, and hearing impairments, and for persons using wheelchairs.

Some types of features (such as the reservation of parking spaces near accessible building entrances) will cost nothing to incorporate; the installation of other features, such as elevators, can be costly. Rarely will Massachusetts Rehabilitation Commission or Massachusetts Commission for the Blind subsidize the elimination of architectural barriers. In some instances Massachusetts Rehabilitation Commission may provide the employee with a portable ramp. If some safety regulation would forbid the person from being employed without a certain modification, then Massachusetts Commission for the Blind might underwrite the cost. However, it is usually up to the employer to pay for modifications of the job site.

Legislation which may mobilize some employers to assume the cost of eliminating barriers, Section 503 of the Rehabilitation Act of 1973, requires any employer having a federal contract of over $2,500 to undertake an affirmative action plan (see below for further discussion of this legislation). The law states that contractors must attempt to provide accommodation, such as architectural accessibility, to the physical

limitations of the employee, "unless the contractor can demonstrate that such an accommodation would impose an undue hardship on the conduct of the contractor's business." A brochure explaining the regulations further states:

> Required architectural accommodation will depend on reasonableness under all of the circumstances, including such things as the extent, the kind, and the cost of accommodation. This means that each case will have to be considered individually. On large contracts, where an employer can be expected to hire numbers of handicapped persons, more extensive architectural accommodations might have to be provided, while on smaller contracts the contractor may need provide no more than an access ramp and toilet facilities.[4]

Revised regulations regarding Section 503 are forthcoming in the next few months; they may clarify the extent of the employer's responsibility for making the job site accessible.

Section 504 of the Rehabilitation Act of 1973 pertains to organizations receiving federal grants. The regulations have not yet been promulgated, but Section 504 may affect architectural accommodation in job sites in a similar way as does Section 503.

A bill co-sponsored by Massachusetts Congressman Gerry Studds will, if enacted, provide additional impetus for the employer to eliminate barriers. H.R. 2424, cited as the "Freedom of Access for the Elderly and Handicapped Act of 1975," calls for the provision of a tax incentive for businesses to renovate their sites for accessibility. The bill allows the taxpayer "to treat qualified architectural and transportational barrier removal expenses which are paid or incurred by him during the taxable year as expenses which are not chargeable to capital account. The expenditures so treated shall be allowed as a reduction." At the time of this printing the bill is being considered in the House Ways and Means Committee. Gerry Studds' office may be contacted regarding the status of the bill.

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[4] U. S. Department of Labor, Employment Standards Administration. "Affirmative action to employ handicapped people: how the new law on federal contracts affects the employer/protects the jobseeker and employee" (n.d.).

The second type of physical environment and modification that may be necessary is the alteration of working conditions such as temperature, humidity, and noise. For example, excessive heat, cold or humidity can be dangerous to the individual with a heart condition. This problem can be ameliorated rather easily by placing a humidifier, heater, or air conditioner in the room where the employee is working or by moving the employee to another part of the job site where such conditions do not exist.

Some individuals with hearing impairments may not be able to tolerate loud noises or may actually be in danger of losing their residual hearing if exposed to consistently loud noises. Noise can be reduced by placing vibrating equipment on rubber foundations, by lining walls with noise-absorbent materials, or by using specially designed ear plugs or ear muffs.

Use of Special Aids

Using a special aid to compensate for a physical limitation is often the least expensive and easiest way to adapt a job so that it can be performed both efficiently and safely. Both Massachusetts Rehabilitation Commission and Massachusetts Commission for the Blind routinely pay for such tools and devices. There are many types available, some of which have been discussed already in the chapters, "Student Population to be Served," and "Instructional Services." Three sources of information on such devices are: Aids to Independent Living: Self-help for the Handicapped by Lowman and Klinger; Catalog of Aids & Appliances, and International Catalog of Aids & Appliances for Blind & Visually Impaired Persons, both published by the American Foundation for the Blind.

There are numerous telephone aids for persons with hearing, visual, speech and motion impairments:

- The bone conduction telephone receiver transmits sound vibrations to the inner ear of persons who hear better by bone conduction.

- The Code-Com set converts sound into visual and tactual signals that can be read by persons who are deaf and felt by persons who are deaf and blind.
- The Dataphone service links telephones to teletypewriters and telewriting devices used by hearing impaired persons.
- The speakerphone system allows use of the telephone by persons with limited manual capacities.

Descriptions of these and other aids are found in the pamphlet Services for Special Needs, which is available from the local Bell Telephone Business Office.

Resources to Facilitate Job Placement

Discussed below are various resources which will prove very useful in all stages of job placement -- in encouraging employers to hire persons who are disabled, in identifying job openings, in actually applying for the jobs, and in securing the job. Both community college placement personnel and students should be aware of and use these resources.

Affirmative Action

Legislation which promises to have impact on the procurement of jobs is Section 503 of the Rehabilitation Act of 1973 (Public Law 93-112) which mandates that organizations with federal contracts over $2,500 must establish affirmative action programs relative to the active recruitment and nondiscriminating hiring and promotion of persons who are disabled. As indicated previously in this chapter, this legislation also requires employers to attempt to make their job sites physically accessible.

This legislation is important to students for several reasons. First, students should be aware of their rights to file a complaint with the employer and, if necessary, with the Department of Labor, if they

feel they have been discriminated against, either in application for employment or while being employed. Secondly, knowledge that affirmative action programs exist may influence students to make their handicap known to the prospective employer (e.g. in a resume), "to assure that the affirmative effort of an employer is directed to appropriate persons. A primary responsibility for letting the employer know that a handicap exists rests with the individual."[5]

The Affirmative Action regulations will have been revised shortly after this Guide is printed. E. William Richardson, Associate Assistant Regional Director of the Office of Federal Contract Compliance Programs in Boston will provide copies of the new regulations and interpretive literature about them.

The regulations for implementing Section 504 of the Rehabilitation Act of 1973 have not yet been published, but it is anticipated that the thrust will be similar to that of Section 503, only directed toward agencies receiving federal grants, as opposed to contracts. Employment opportunities for disabled persons should expand somewhat in educational, medical, and nonprofit organizations as a function of Section 504. For further information contact the regional Office for Civil Rights of the U.S. Department of Health, Education, and Welfare.

A law affecting disabled veterans only is the Vietnam Era Veterans' Readjustment Assistance Act of 1974. Public Law 93-508 mandates federal contractors to develop affirmative action programs to hire qualified disabled veterans. At the time of this writing the Massachusetts Division of Employment Security is awaiting guidelines which will enable implementation of the legislation. It is too soon to know whether this law will be more enforceable than previous legislation which required a federal contractor to list job openings with the Division of Employment Security in order to give priority of referral to veterans.

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[5] Ibid.

Employment Projections and Placement Possibilities

In the Job Placement questionnaire most community colleges indicated a need both for projections of labor market demands and for sources of jobs in their communities. Massachusetts Rehabilitation Commission has recently started publishing the Employment Resources Newsletter which should meet precisely these needs. Each month the Newsletter will discuss Massachusetts projections for a particular family of jobs and will discuss legislation affecting employment. Private companies which have developed affirmative action programs for disabled persons will be highlighted. The Newsletter may also list all firms in Massachusetts which have received federal contracts along with the amount of each contract. To be placed on the mailing list, write to Lawrence Warnock, Director of Employment Resources at the Massachusetts Rehabilitation Commission.

Civil Service Accomodations

The United States Civil Service Commission provides two services for disabled persons.

The first is a non-competitive appointment authority available to federal agencies interested in offering a job to a severely handicapped individual. The severely handicapped person does not necessarily have to qualify through testing or evaluation of experience and education. A State or Veterans Administration rehabilitation counselor forwards to the interested agency (prospective employer) a statement that its client has the ability to perform a specific job in a federal agency, is physically able and "socially competent." A report of a current medical examination will also be required before appointment may be made.

The Selective Placement Coordinator for eastern Massachusetts is Mr. F. Lee Schmedes of the U.S. Civil Service Commission's Boston Area

Office. He may be contacted for further explanation of this system. The Staffing Division of the U.S. Civil Service Commission's Regional Office can supply names of coordinators elsewhere in Massachusetts and New England.

It should be noted that Selective Placement Coordinators generally do not actually find a job for the applicant; rather, their role is to maintain liaison with federal agencies and to coordinate special services to assure equal employment opportunities for disabled persons.

The second U.S. Civil Service provision offered is the modification of testing procedures. When filling out the application form, the person should append a note identifying his/her disability and his/her particular need regarding a testing situation. The test arrangement clerk will make the necessary plans and notify the person accordingly. For persons who are visually impaired, alternative means of administering tests -- braille, large type, or cassette -- are provided. Options vary according to the test. Use of a reader is possible for some exams but is discouraged by the agency. Interpreters can be supplied for deaf persons if they have difficulty lipreading.

It should be noted that disabled veterans who are determined eligible receive a 10-point preference on the federal civil service list.

The U.S. Civil Service has published a number of pamphlets explaining these services and other factors related to the federal employment of physically disabled persons. Community college staff and students should obtain the following:

Handbook of Selective Placement in Federal Civil Service Employment of the Physically Handicapped, the Mentally Restored, the Mentally Retarded, the Rehabilitated Offender.

Employment of the Deaf in Federal Service. BRE-22.

Employment of the Blind in the Federal Service. BRE-23.

Employment of Epileptics in the Federal Service. CSC-614.

Employment of Physically Handicapped Persons in the Federal Service. BRE-8.

When applying to the Massachusetts Division of Personnel Administration (formerly the Division of Civil Service) individuals should append to their application a letter identifying their disability and particular testing need. A reader may be provided for blind persons. In the experience of the Division of Personnel Administration, hearing impaired persons have little difficulty with instructions since they are mostly written, but special arrangements for the hard of hearing or deaf person will be made, if necessary. Further information can be obtained by calling the Division in Boston.

In the initial "open examination" a disabled veteran goes to the top of the list, but in subsequent exams he (as well as a non-disabled veteran) receives a two-point preference.

Massachusetts Commission on Employment of the Handicapped

The Commission on Employment of the Handicapped maintains a toll-free service which provides information on job placement agencies/services throughout the state and on legislation relevant to employment rights of disabled persons. A branch of the President's Committee on Employment of the Handicapped, the Commission provides employment-related public information pamphlets which community colleges can forward to prospective employers. Inquiries should be made to Frank McNulty, Information Officer.

Task Force on the Handicapped, Inc.

This agency is mutually supported by Massachusetts Rehabilitation Commission and the Division of Employment Security. It serves as a job clearinghouse and provides direct placement. In addition, the Task Force will consult with an employer or prospective employee on possible

job adaptations, and conducts educational meetings with employers to discuss any misconceptions which may exist regarding the hiring of a disabled person.

Bibliography on Job Placement

The Rehabilitation Counselor Training Program at University of Georgia has compiled an extensive Bibliography on Job Placement, which may be useful to job placement personnel who have specific issues to explore or who wish to gain an overview of the placement process in relation to physically disabled persons. Because it is now being updated, the revised edition should be requested.

Unpaid Work Experience Program

A major selling point for job-seekers is being able to offer a record of actual on-the-job experience. Section 501 of the Rehabilitation Act of 1973 indicates that handicapped persons may acquire work experience in federal agencies. Under this provision Massachusetts Commission for the Blind will place clients in summer jobs. The federal agency itself does not pay the individual, but the Commission does provide a $50 weekly stipend.

The program at Massachusetts Rehabilitation Commission is currently in beginning stages and is somewhat different than the one described above. The unpaid work experience is seen as an extension of the client's training, and when the client is job-ready, an effort is made to place him/her in a federal agency for a maximum of three months. During this time the client is not paid except for transportation to and from work. At the end of the work period, Massachusetts Rehabilitation Commission determines whether there is a paid job possibility for the individual in the agency. If not, the client discontinues working in the unpaid position.

On-the-Job Training

In some instances when a disabled person requires more than the usual amount of initial training or supervision, and when an employer balks in hiring the person because such extra time is needed, both Massachusetts Rehabilitation Commission and Massachusetts Commission for the Blind will initially pay part of the employee's salary. This often provides an incentive for the employer to hire the handicapped person. The amount paid is never the entire salary; length of time of the subsidy is determined on an individual basis.

Massachusetts Division of Employment Security

Each local Division of Employment Security office has specialists who may be helpful to job placement personnel: A Specialist in Services to the Handicapped (SSH) and a Veterans Employment Representative (VER). Both attempt to maximize services to their client groups in the areas of employment counseling and referrals. In addition, the SSH does job development. He/she may provide a profile of a handicapped client to a potential employer and suggest ways to restructure a job, if this appears necessary. Testing of the client may be done occasionally, but only as part of the over-all counseling plan.

National Alliance of Businessmen

Disabled veterans may avail themselves of the services of the National Alliance of Businessmen (NAB), which is involved in the Jobs for Veterans Program, an effort to encourage employers to hire veterans. With the individual's permission NAB will prepare a "mini-resume" for the veteran and send it to employers with whom NAB has contact. NAB also holds work seminars as part of the Veterans Employment Seminar Program, where veterans are advised on techniques for getting jobs, and given assistance with resumes. Interviews may be held with prospective employers who have been invited. James Greene should be contacted for further information.

Job Development

The goal of job development, as defined here, is to encourage and enable the prospective employer to view the applicant, not as a disabled applicant, but primarily as an educationally qualified person with particular skills to bring to a job. Once eligibility is determined on the basis of education and skill qualifications, issues such as the architectural accessibility of the job site, the modification of a piece of machinery, or the methods for communicating with the deaf employee, can be discussed.

Although some employers will have equitable attitudes regarding the employment of persons who are disabled, it is not unlikely for many employers to be reluctant to hire handicapped people. The employer may have misconceptions regarding increased insurance costs, higher accident rates, poor attendance, or lower productivity. The employer may feel uneasy about relating to the handicapped individual. It is the responsibility of the placement personnel, state agencies, and the students themselves to work as a team to sensitize and educate employers. But before mounting efforts in this direction, the community college placement staff should find out if the students want such efforts to be undertaken. If so, the Commission on Employment of the Handicapped can be contacted and may be able to identify companies which are already affirmative action oriented and to provide materials to disseminate to employers.

Two types of job development activities to elicit employee cooperation and increase chances for employment are presented next: the broadbased effort undertaken in behalf of a number of community college students prior to the time of referral; and the effort conducted at the time the individual student with a disability is referred. Both activities provide an opportunity to correct the various employer misconceptions that are discussed in the third section below.

Broadbased Job Development Activities

There can be a disadvantage to conducting job development activities aimed solely at promoting jobs for disabled persons. Regardless of the care that is taken to apprise the prospective employers of the commonalities of disabled and able-bodied employees, the fact that the effort is focusing only on handicapped persons may unintentionally reinforce the employer's notion that handicapped persons are "different," or may otherwise feed into an employer's notion of philanthropy. This seeming "Catch-22" can be resolved, at least in part, by incorporating the sensitization/education of employer within the broader context of job development activities for all students graduating from the community college.

The placement office, perhaps in conjunction with the Department Chairperson of a career program, can contact prospective employers for purposes of job development in a particular career area. Letters or brochures may be sent out to employers, informing them of the career program existing at the community college, discussing the type of training/education provided to the student, mentioning that previous graduates have been successfully employed at X, Y, and Z firms, and encouraging the firm to consider the community college as a source of recruitment for well-prepared employees. Within this context, the letter/brochure can mention that some of the students in the program are physically disabled, and that the physical disability does not handicap the student in respect to training for, or engaging in, the particular career. Or, one can introduce the topic by a statement such as: "A number of firms are recruiting handicapped individuals as part of their affirmative action programs. Many firms with federal contracts (grants) are now required by law to implement affirmative action policies. You may be interested to know that some students graduating from the college's program this year are physically disabled." The letter can then state that "employers sometimes have questions regarding the employment of persons with physical disabilities,"

and that the placement office would be glad to answer these questions or direct the employer to the appropriate agency.

Another job development technique used by placement personnel at some postsecondary institutions is to invite a group of prospective employers to the college. At this meeting, the Department Chairperson, instructors, and placement personnel can discuss the career program with employers and alert them to the existence of the community college as a source of recruitment. As with the brochure, one can address the fact that certain of the students enrolled are physically disabled and then discuss any questions the employers may have. It is also advantageous to give employers a tour of relevent community college facilities (e.g. laboratories) so they will have the opportunity to view both able-bodied and handicapped students engaged in the same learning activities on an equal par.

Employer Contact at the Time of Referral

The placement officer's informing the employer of an individual's handicap at the time of referral is a generally accepted placement technique.[6] The advantages of such contact are the same ones engendered by the broadbased development activities discussed previously. Such early orientation provides an opportunity to clear up some of the employer's stereotypes and misgivings before the individual applicant and employer meet, so that at the interview the employer can more equitably assess the applicant's relevant qualifications and more openly discuss

[6] This, of course, should be done only with the consent of the individual student; it is the perogative of the student to disavow this practice for him/herself. This issue is a particularly important one for persons with epilepsy: those who do disclose the fact of their epilepsy are often more prone to encountering employment discrimination. Yet studies have shown that persons who did not disclose their epilepsy prior to being hired, and who had seizures on the job, were fired. A discussion of this complex problem may be found in George N. Wright (ed.), Epilepsy rehabilitation. Boston: Little, Brown and Company, 1975, pp. 181-82.

possible ramifications the disability may have upon employment.

This contact with the employer should not come off as a "hire the handicapped" spiel. The placement officer can start the conversation/letter by indicating that he/she is referring a certain student, and then enumerating the student's qualifications as would be done for any student. The next comment might be: "You may be interested to know that Ms. X has a visual impairment. We do not feel that this will impede her performance on the job, but if you have any questions regarding this I'd be glad to answer them now, or, if you don't mind waiting, you can discuss your questions with Ms. X when she comes for her interview."

While it is helpful to discuss concerns before the interview, it can also be productive for the students themselves to politely educate and sensitize employers, if need be, at the interview. Handled correctly, the effort can reflect positively on the independence of the student. Some students will already be prepared to deal with the employer's concerns, but if not, the student can become acquainted with the materials identified in the next section to acquire the necessary facts, and can try some role playing beforehand.

Information for the Prospective Employer

There are numerous public information pamphlets which can be used to elicit the employer's cooperation in hiring a person who is disabled, to educate the employer on special modifications which may be needed either in the application process or on the job, to dissipate stereotypes, and to correct misinformation. The job placement staff should have this information on hand, to educate themselves, the prospective employer, and if need be, the job-seeker.

A surprising number of employers will object that their workmen's compensation premiums will automatically increase if a physically disabled person is hired. This is not true. For example, a recent study

conducted by the E.I. duPont de Nemours and Company of its handicapped employees indicated that "duPont has had no increase in compensation costs as a result of hiring the handicapped."[7]

Insurance companies do not take the physical condition of employees into consideration when computing a firm's premiums for workmen's compensation coverage. Premiums are computed in two ways. For most employers, rates are based on the class into which the employer falls, the class being determined primarily by the industry involved and the hazards relative to that industry. For some larger employers "individual risk ratings" are performed, so that premiums are based on the employer's actual past experience with industrial accidents. But because the safety record of properly placed disabled workers is similar to that of able-bodied persons,[8] and because of the formula used to compute premiums, the danger of an employer's premiums increasing because of higher accident rates is minimal. Two pamphlets which very cogently explain the issues of workmen's compensation and safety records are: Hiring the Handicapped: Facts and Myths, published by the American Mutual Insurance Alliance in cooperation with the President's Committee on Employment of the Handicapped, and Workmen's Compensation and Epilepsy by the Epilepsy Foundation of America.

Employers occasionally cite union opposition as one reason for not hiring handicapped persons. However, unions such as the AFL-CIO have publicly stated their support for employment of disabled individuals.[9] Furthermore, the AFL-CIO at its 1967 Convention recommended that "prohibition against discrimination in the employment of the handicapped be included in fair employment practices of collective bargaining

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[7] J. Wolfe. "Disability is no handicap for duPont." Alliance review (Winter 1973-74). Reprinted by the President's Committee on Employment of the Handicapped.

[8] Ibid.

[9] AFL-CIO Executive Council policy statement on "Support of rehabilitation associations," 1972.

agreements."[10] The pamphlet Working together....the key to jobs for the handicapped, published by the AFL-CIO and available from the President's Committee on Employment of the Handicapped, voices the union's stand on this issue.

Nevertheless, local union opposition may arise in situations where there is a progression of job levels that a worker normally follows and where the entry level job is one which the handicapped applicant may not be able to perform. Therefore, this individual is applying for a higher level job (which is usually higher paid as well). In some situations the handicapped person may be best able to perform at the level he/she is entering and prefer to remain at that level or perhaps progress to the next one, rather than continuing to the final level. If this is the case, it should be pointed out to the union.

Sometimes unions also oppose preferential treatment to handicapped workers rather than their employment per se. If there is a waiting list for entry, they may feel that a disabled veteran, for example, should not be given preference.

In an occupation which is strongly unionized, placement personnel (or perhaps the applicant's counselor at Massachusetts Rehabilitation Commission or Massachusetts Commission for the Blind) may want to contact the union directly.

Employers' questions regarding blind persons -- What kind of orientation is needed? How do I teach specific job skills? What kind of work can a blind person do? -- are answered in two American Foundation for the Blind pamphlets. They are Why Not Hire a Blind Person? and When You've Hired a Blind Person. Frequently inquiries are made about how the person will get around. The placement officer can mention that

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[10] AFL-CIO Convention policy statement on "Human rehabilitation," 1967.

Massachusetts Commision for the Blind will arrange for a peripetologist to provide mobility training to the employee and forward a copy of How Does a Blind Person Get Around?, also available from the American Foundation for the Blind.

An excellent brochure for the orientation of employers is Hiring Persons With Hearing Impairments which is available from the President's Committee on Employment of the Handicapped. It emphasizes that communication limitations resulting from deafness are not indicative of impaired intellect, and discusses the methods of communication which can be used in the employment setting. A most important topic covered is the use and interpretation of intelligence, aptitude, and personality tests that are frequently used to screen applicants. The pamphlet points out that tests which are validated on hearing individuals and which involve high verbal ability may not really measure the true potential of the hearing impaired person to successfully perform the job.

Another tool for orienting the prospective employer is the simple and direct pamphlet, Good Personnel Practices Include--the Handicapped, which may be obtained in quantity from the Massachusetts Commission on Employment of the Handicapped. It discusses the initial interview with the applicant, orientation of the new employee to the job, and the possible need for making adaptations in the work setting.

RESOURCES

Persons & Organizations

GREENE, JAMES M.

Manager, Jobs for Veterans Program
National Alliance of Businessmen
50 Federal Street
Boston, MA 02110
(617) 482-6513

McNULTY, FRANK

Information Office
Massachusetts Commission on Employment of the Handicapped
Charles F. Hurley Employment Security Building
Government Center
Boston, MA 02114
(617) 727-6470

MASSACHUSETTS DIVISION OF PERSONNEL ADMINISTRATION

P. O. Box 2600
Boston, MA 02208
(617) 727-2308

OFFICE FOR CIVIL RIGHTS

U. S. Department of Health, Education, and Welfare
RKO Building
Government Center
Boston, MA 02114
(617) 223-6397

RICHARDSON, E. WILLIAM

Associate Assistant Regional Director
Office of Federal Contract Compliance Programs
JFK Federal Building - Room 1612 C
Boston, MA 02203
(617) 223-4232

ROBICHAUD, JOHN H.

Specialist in Sensory Aids
Massachusetts Commission for the Blind
39 Boylston Street
Boston, MA 02116
(617) 727-7527

SCHMEDES, F. LEE

Selective Placement Coordinator
U. S. Civil Service Commission
Boston Area Office
3 Center Plaza
Boston, MA 02108
(617) 223-5038

SNELL, CHARLES

Industrial Engineer
Massachusetts Rehabilitation Commission
296 Boylston Street
Boston, MA 02116
(617) 727-2184

STUDDS, GERRY E.

Congressman
1143 Washington Street
Hanover, MA 02339
(617) 826-3866
OR
1511 Longworth House Office Building
Washington, DC 20515

TASK FORCE ON THE HANDICAPPED, INC.

Charles F. Hurley Employment Security Building
Government Center
Boston, MA 02114
(617) 727-6451 (task force)
(617) 727-4211 (job clearinghouse)

U. S. CIVIL SERVICE COMMISSION

Boston Regional Office
Staffing Division
J. W. McCormack Post Office and Courthouse
Boston, MA 02109
(617) 223-2555

VILLA, WILLIAM

Employment Specialist
Massachusetts Commission for the Blind
39 Boylston Street
Boston, MA 02116
(617) 727-5586

WARNOCK, LAWRENCE

Director of Employment Resources
Massachusetts Rehabilitation Commission
296 Boylston Street
Boston, MA 02116
(617) 727-2194

Publications

Adaptation of jobs for the disabled. 1969. $3.20

International Labour Office
United Nations
New York, NY 10017

Aids to independent living: self-help for the handicapped. Edward Lowman and Judith Klinger. 1969. $42.50 plus postage.

McGraw Hill Book Co.
Order Services
Princeton-Hightstown Road
Hightstown, NJ 08520

OR

Massachusetts Institute of Technology (ILL)
Humanities Library
14S-224 RD755
Interlibrary Loan .L918
Cambridge, MA 02139
(617) 253-5682

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413 Aderhold Hall
University of Georgia
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